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REVISION OF RISLEY'S ANTHROPOMETRIC  
DATA RELATING TO TRIBES AND  
CASTES OF BENGAL

BY

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# SANKHYĀ: THE INDIAN JOURNAL OF STATISTICS.

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# A REVISION OF RISLEY'S ANTHROPOMETRIC DATA RELATING TO THE TRIBES AND CASTES OF BENGAL.

By P. C. MAHALANOBIS.

## INTRODUCTION.\*

A great deal of acrimonious controversy has taken place regarding the anthropometric data collected by Sir H. H. Risley in 1886-8, and published by him in 1891. They were hailed as epoch-making by the followers of Risley, and were condemned equally vehemently by his opponents. The prevailing fashion among the students of Indian anthropology just at present appears to be to reject them as worse than useless. And yet conclusions based on these data have become ensconced in Gazetteers and official papers of the Government of India, and are gradually being incorporated in books of reference and text-books. A critical examination of Risley's work has therefore become urgently necessary.

Risley's conclusions may be challenged on two grounds:—(a) the reliability of his data, and (b) the methods of analysis used by him.<sup>1</sup> In the present paper I propose merely to examine the reliability of the measurements given by him, so far as this can be done by internal comparisons and checks within the body of the data.

In appraising the scientific value of the data the following points are of prime importance.

(a) These measurements were taken on one definite system,<sup>2</sup> and under the supervision of one single individual. Risley had noted:<sup>3</sup>

"The measurements recorded in these volumes were taken under my supervision in Bengal, the North-Western Provinces and the Punjab during 1886 and the two following years. The instruments used were those contained in the *boîte anthropométrique* recommended by Professor Paul Topinard in his *Eléments d'Anthropologie Générale*, with the addition of the goniometer devised by him for measuring the facial angle of Cuvier. With a single exception, Professor Topinard's methods of measuring and of calculating indices were followed throughout. The exception is the naso-malar index, the data for which were measured and the index calculated in the manner described by Mr. Oldfield Thomas in the *Journal of the Anthropological Institute of Great Britain and Ireland* for May 1885".

"My cordial acknowledgements are due to Mr. J. C. Nesfield, Inspector of Schools, Oudh, for supervising the measurements taken in the North-West Provinces; to Chandi Sing, Clerk in the office of the Inspector of Schools, Oudh, for carrying out those measurements; to Alá-uddin, Civil Hospital Assistant, Lahore, for the measurements taken by him for the Panjab; and especially to Babu Kumud Behari Sámanta, Civil Hospital Assistant, for the large series of measurement taken by him in Bengal, and for his labours in calculating indices and averages, and in making a variety of ethnographic inquiries for me."

---

\*Communicated to the Indian Science Congress, Anthropological Section, 1931.

<sup>1</sup> I may note in passing that Risley's methods of analysis cannot be considered fully adequate, and it is quite likely that many of his conclusions will have to be revised in the light of recent advances in the technique of statistical analysis. I hope to discuss these questions in other papers.

<sup>2</sup> The technique of measurement was described by Risley in a paper entitled "Anthropometric Instructions" in the *Journal Asiat. Soc. Bengal*, Vol. LXII, Part III, No. 3, 1893, Appendix pp. 1-9.

<sup>3</sup> The Tribes and Castes of Bengal by H. H. Risley (Calcutta, 1891), Vol. I, Preface.

## RISLEY'S ANTHROPOMETRIC DATA FOR BENGAL,

I have shown elsewhere<sup>4</sup> how difficult it is to compare data given by different observers owing to difficulties of standardization of measurements on the living. It will be noticed that in the present material the same observer is responsible for the measurements in each of the provinces of Bengal,<sup>5</sup> North-Western Provinces,<sup>6</sup> and the Panjab. The provincial measurements are therefore certainly comparable among themselves. Apart from personal equations, measurements for different provinces should also be comparable; in any case second-order quantities, such as the variability, the coefficient of correlation, etc., would be almost certainly comparable. This constitutes an outstanding merit of Risley's data.

(b) The material consists of measurements on 5784 individuals belonging to 87 different castes and tribes distributed over practically the whole of North India. It is true that the size of the sample is not adequate in every case, but in a majority of cases (45 castes and tribes) the size of the sample is greater than 70. The following table gives the distribution of the samples according to the size of the sample.

TABLE 1. SIZE OF RISLEY'S SAMPLE.

Size of Sample	Number of Sample	Progressive Total
185	1	1
100-109	35	36
90-99	1	37
80-89	4	41
70-79	4	45
60-69	7	52
50-59	5	57
40-49	3	60
30-39	5	65
20-29	8	73
10-19	8	81
2-9	6	87
Total	87	87

(c) The number of characters is also fairly large. Eleven measurements (comprising stature, weight, and 9 measurements on the head) and 8 indices (including the height-weight index, the facial angle, and 6 other indices) are available for practically all the castes and tribes. Two additional measurements on the head and two additional indices are also available for 53 samples.

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<sup>4</sup> "On the Need of Standardization of Measurements on the Living," *Biometrika*, Vol. XX, Part II, 1928, pp. 1-31.

<sup>5</sup> Bengal included Chittagong Hills, Darjeeling Hills, Chota Nagpur and Bihar in Risley's time

<sup>6</sup> The United Provinces of Agra & Oudh of the present time.

These are points in favour of Risley's material. *It represents the longest available series of comparable material covering a fairly wide range of characters for Indian castes and tribes.*

We may now consider the case against the material. I must confess that the greater part of the criticisms levelled against Risley's data have been of an *a priori* character and follow a typical channel:—Risley's conclusions are unacceptable to the critic, and therefore Risley's data must be unreliable.

It is not necessary to discuss such arguments. But two pieces of serious criticism have been advanced which require consideration.

(a) It has been alleged that Risley's samples are not fair or unbiassed samples; that the subjects were selected with a view to proving particular theories. The actual instruction issued by Risley is given below.

"In selecting subjects, only adults between the ages of 25 and 45 should be taken. Accurate determination of age being of course impossible, those persons must be rejected who are obviously not fully grown, or who appear to be over 45, deformed persons, dwarfs, cripples, and men who have suffered from any disease affecting the form of the nose. In measuring the higher castes it is as well also to reject persons of very black complexion and with very broad and depressed noses, as in such cases there is at least a suspicion of the intermixture of low-caste blood. Similarly among the lower castes, men of very fair complexion and high caste type of feature should be rejected. The object is to determine the standard type of each caste, and for this purpose individuals of clearly exceptional colouring and feature should be excluded" (p. 1).

No exception can be taken to the first portion of the above instructions. The latter portion dealing with the avowed purpose of obtaining a standard type for each caste is, however, open to criticism. The principle of selection introduced is likely to exaggerate the divergence between high and low castes. It may also affect differentially the inter-relation between the castes. But how far, if at all, the samples have been actually vitiated cannot be determined on *a priori* grounds and without replication of the measurements. We must therefore wait for fresh material before the question can be finally settled. But in order that comparison with such fresh material (when available) may be possible it is necessary to examine and analyse Risley's material as carefully as possible. We may, therefore, proceed with our work, throwing, for the present, the onus on the critics to prove that Risley's samples are biassed or selected samples.

I ought to note however that so far as I am aware the allegations have been invariably in general terms, and no specific quantitative comparisons based on fresh measurements have been made to support them. Further, I should point out that reading through Risley's discussion of his material does not create the impression as if he was arguing from pre-conceived notions.

(b) The one fundamental objection to Risley's data was pointed out about thirty years ago by Karl Pearson.<sup>7</sup> He found that figures given in Risley's book showed serious discrepancies. This objection, if sustained, must prove fatal, and it is necessary to scrutinize the data very carefully before they can be used for any scientific purpose.

This is what I propose to do in the present paper. As I have already pointed out it is not my intention to try to analyse the material or to draw any conclusions from them in the present paper.<sup>8</sup>

<sup>7</sup> S. Jacob, A. Lee and Karl Pearson: "Preliminary Note on Inter-racial Characters and their Correlation in Man." *Biometrika*, Vol. II (1902-1903), p. 348. "In all instances where Risley's mean looked suspicious new averages were struck, and several rather serious errors were in some cases found."

<sup>8</sup> I have given a preliminary analysis for a few selected Bengal castes in a paper on "Analysis of Race-Mixture in Bengal" (*J. A. S. B.*, Vol. XXIII, 1927, No. 3, pp. 310-313).

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## DESCRIPTION OF THE MATERIAL.

Risley classified the data by Province and by caste or tribe.\* In his Table II the individual records were arranged under each caste or tribe in successive columns in the following way:—(1) (Serial) Number, (2) Name of subject, (3) District of birth, (4) Age, (5) Nasal height, (6) Nasal width, (7) Bimalar breadth, (8) Naso-malar breadth, (9) Cephalic length, (10) Cephalic breadth, (11) Minimum frontal breadth, (12) Maximum bizygomatic breadth, (13) Height, vertex to inter-supercilliary point, (14) Height, vertex to tragus, (15) Height, vertex to chin, (16) Stature in cm., (17) Weight in grammes, (18) Remarks.

In Table I, columns (1) to (4) are repeated for each caste; then come the following indices in successive columns; (5) Nasal, (6) Naso-malar, (7) Cephalic, (8) Fronto-zygomatic, (9) Vertico-cephalic, (10) Vertico-bimalar, (12) Vertico-frontal, (13) Vertico-bizygomatic, (14) Height and weight,<sup>10</sup> (15) Facial angle.

The constituents for the indices are shown below:—

$$\begin{array}{ll} \text{Nasal} & = \frac{(\text{Nasal breadth})}{(\text{Nasal height})} \times 100 \\ \text{Nasomalar} & = \frac{(\text{Nasomalar breadth})}{(\text{Bimalar breadth})} \times 100 \\ \text{Cephalic} & = \frac{(\text{Cephalic breadth})}{(\text{Cephalic length})} \times 100 \\ \text{Vertico-frontal} & = \frac{(\text{Frontal breadth})}{(\text{Vertex to chin})} \times 100 \\ \text{Frontozygomatic} & = \frac{(\text{Frontal breadth})}{(\text{Bizygomatic breadth})} \times 100 \\ \text{Vertico-cephalic} & = \frac{(\text{Cephalic breadth})}{(\text{Vertex to chin})} \times 100 \\ \text{Vertico-bimalar} & = \frac{(\text{Bimalar breadth})}{(\text{Vertex to chin})} \times 100 \\ \text{Vertico-bizygomatic} & = \frac{(\text{Bizygomatic breadth})}{(\text{Vertex to chin})} \times 100 \end{array}$$

Table 2(A) gives the list of symbols used in the text and in the Tables.

TABLE 2(A). SYMBOLS USED IN THE TEXT AND TABLES.

(1) Characters.	(2) Indices.
Bb	Bimalar breadth
Bz	Maximum Bizygomatic breadth
Cb	Cephalic breadth
Cl	Cephalic length
Fb	Minimum Frontal breadth
Hvc	Height, vertex to chin
Hvi	Height, vertex to inter-supercilliary point.
Hvt	Height, vertex to tragus
Nh	Nasal height
Nm	Nasomalar breadth
Nw	Nasal width
CI	Cephalic Index
FA	Facial Angle
FzI	Fronto-zygomatic Index
NI	Nasal Index
NmI	Naso-malar Index
VbI	Vertico-bimalar Index
VcI	Vertico-cephalic Index
VfI	Vertico-frontal Index
VzI	Vertico-byzygomatic Index.

\* I have adhered to Risley's spelling of all names of castes and tribes, and to his anthropological terminology, which differs in many respects from modern usage. Measurements are given in millimetres unless otherwise stated.

<sup>10</sup> The Height-Weight Index and Facial angle have not been scrutinized in the present paper.

The Bimalar breadth and Nasomalar breadth were not measured in certain cases, and the Vertico-bimalar and Nasomalar indices are, therefore, not available in such cases. Eleven measurements and 9 indices are available for practically 3,259 individuals ; and 9 measurements and 7 indices are available for the remaining 2,525 individuals ; (a few characters are however missing here and there). The total number of individual figures therefore amount to considerably over one hundred thousand (100,000).

In addition to more than one hundred thousand of individual figures, Risley also gave the average values of the different characters and indices separately for each caste or tribe.

In the present paper I have restricted my examination to the measurements on the head, and have omitted reference to age, stature, weight, the height-weight index, and also to facial angle.

#### PROCEDURE FOLLOWED IN SCRUTINIZING THE DATA.

(1) All the indices were first recalculated. A comparison with Risley's figures showed all discrepancies in indices.

(2) All averages were recalculated and compared with Risley's figures.

(3) Any discrepancy in the average rendered suspect all individual figures involved, and discrepancies in an index made both the constituent measurements doubtful. This furnished the primary list of figures to be scrutinized.

It will be seen, therefore, that only such figures as were not connected with any discrepancy either in any of the indices concerned, or in any of the averages concerned, were taken to be free from doubt.

(4) All the doubtful figures (both measurements and indices) were carefully scrutinized, and an exhaustive search was made in every case to locate all possible sources of discrepancies. In many cases the source of discrepancy could be detected with a good deal of certainty. In other cases various provisional corrections and calculations were made to see whether there was any substantial improvement in the agreement with the remaining figures concerned.

#### CLASSIFICATION OF DISCREPANCIES.

In a large majority of cases the discrepancies and corrections could be classified into a number of distinct types.

##### (1) GENERAL MISTAKES.

(1.1) I found that very often Risley failed to give the last decimal figure (chiefly in indices and means) correctly. Thus in Risley's book, 78.12 and 78.19 would be both printed as 78.1 (and not as 78.1 and 78.2 respectively, as they should be). I surmise that the index-table used by him was probably calculated only up to the figure actually given, and not up to the next succeeding figure (which is required in order to give the previous figure correctly). Risley's average values were also very likely calculated only up to the figure actually given.

Owing to this defect in Risley's arithmetic, his figures would very often show discrepancies of  $-0.1$ . This is clearly brought out in Table 9, p. 102. For indices there are 43 discrepancies of  $-0.1$  out of a total number of 106 discrepancies ; and for measurements 59 out of 151. The average value may in addition show a discrepancy of about  $0.1$  owing to the division being cut off earlier. Thus average values may sometimes show total discrepancies of  $0.2$  owing to faulty arithmetical procedure.

(1.2) It will be seen from Table 10, p. 102 that the percentages of discrepancies other than  $0.1$  and  $0.2$  (*i.e.*, of discrepancies which could not have been introduced by the faulty arithmetical procedure discussed above) are 26.4% and 8.6% for averages of indices and measurements respectively.

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For mean values, we find, therefore, that discrepancies in indices occur about thrice as frequently as discrepancies in measurements.

It will be seen from Tables 5 and 6 (pp. 98-99) that the total number of discrepancies in individual indices and in individual measurements are 126 and 16 respectively. Thus discrepancies in individual indices occur about eight times more frequently than discrepancies in individual measurements. This is, of course, just what is to be expected. The calculation of the index involves additional sources of error, either in the arithmetic or in reading the index-table.

We, therefore, adopted the two following general rules in discussing the discrepancies.

*Rule I.* All discrepancies of magnitude 0.2 or less may be neglected.

*Rule II.* Other things being equal, a mistake is more likely to have occurred in an index figure than in the figure for an observed measurement.

### (2) PRINTING MISTAKES OR MISTAKES IN PRINTING OR TRANSCRIBING.

These are easy to detect, and corrections can usually be made with a high degree of certainty. All printing mistakes are assigned the letter "P" in symbolic representation.

(2.1) The decimal point may get shifted. For example, in Vol. I, p. 3, Bengal Bagdi No. 15, the Vertico-bimalar index is given as (4.73). The correct value must obviously be (47.3) which agrees perfectly with the calculated value.

Such mistakes can be symbolically represented in the following way:—PM [0] which may be read as "Printing Mistake in the position of the decimal point."

(2.2) Sometimes two figures are transposed. Vol. I, p. 19, Bengal Bauri No. 14, Minimum frontal breadth is printed as (101). This leads to serious discrepancies in both the Fronto-zygomatic (printed value 77.6, calculated value 84.6), and the Vertico-frontal (printed 49.0, calculated 53.4) indices. Both these discrepancies can be removed if the Minimum frontal breadth is taken as (110) instead of (101). The mistake evidently arose through a transposition of the two figures (0) and (1).

The symbolic representation is given by:—PM [tr.(0)/(1)] which stands for "Printing Mistake: transposition of (0) and (1)."

(2.3) Sometimes there are obvious misprints. Vol. I, p. 103, Bengal Mahomedan No. 17, Cephalic length is given as (088) instead of (188).

The symbolic representation is:—PM [(0)/(1)] which stands for "Printing Mistake: (0) used in place of (1)."

(2.4) Mistakes due to a confusion and interchange between 3 and 5; 5 and 6; 1 and 7; 0 and 8; 0 and 9; or 6 and 9 are not rare.

Vol. I, p. 90, Bengal Mahomedans No. 13, Vertico-cephalic index is printed as 69.6 instead of the correct value 66.6.

The symbolic representation is given by:—PM [i. (9)/(6)] which signifies "Printing Mistake: 9 interchanged for (6)."

(2.5) Sometimes figures in adjoining lines are interchanged. For example, the figures (5) and (2) occurred in adjoining columns. Instead of using the correct figure (2), the wrong figure (5) is printed by mistake from the adjoining column. The symbolic representation is:—PM [a.c. (5)/(2)] which means "Printing Mistake: adjoining columns interchanged (5) for (2)."

(2.6) In the same way figures in adjoining rows may get interchanged, in which case the symbol would be:—PM [a.r. (5)/(2)] which may be read as “Printing Mistake:— adjoining rows interchanged (5) for (2).”

(3) WRONG ENTRY IN INDEX-TABLES.

A wrong index figure is often taken owing to a mistake in entering the Index-Table.

Vol. I, p. 29, Bengal Brahman No. 100, Fronto-zygomatic index is given as (80.1) ; the calculated value is (79.5). The Frontal breadth is (101), and the Bizygomatic breadth is (127). We find that the value (80.1) occurs in the index-table under (101) and (126). It is clear that in reading the index-table, the figure (80.1) under (126) was taken by mistake instead of the correct value (79.5) given under (127).

Such mistakes can be represented symbolically by:—WT [(126)/(127)] which may be read as:—“Wrong Table entry under (126) instead of under (127).”

(4) WRONG FIGURES.

Mistakes in the index number sometimes occur through the use of wrong figures for one of the constituents taken from adjoining columns or rows. Such mistakes are always labelled by the symbol : WF which stands for “Wrong Figure.”

(4.1) Vol. I, p. 43, Bengal Chandal No. 59, the Cephalic index is given as (69.6) ; the calculated value is (76.5). The Cephalic length is (183), and the Cephalic breadth (140). We find from the index-table that the value (69.6) occurs under Cephalic length (201), and also that this particular value of (201) occurs in the table of individual measurements in the line adjoining the correct value (183). It is clear that in reading the index-table the figure (201) was used by mistake from the adjoining line instead of using the correct value (183). The corrected value of (76.5) is adopted.

The symbolic representation is: WF [a.c. (201)/(183)] which signifies: “Wrong Figure (201) used from adjoining column instead of correct figure (183).”

(4.2) In the same way when the wrong figure is taken from an adjoining row we may indicate the mistake by: WF [a.r. (201)/(183)] which reads as “Wrong Figure (201) used from adjoining row instead of correct figure (183).”

(5) ARITHMETICAL MISTAKES.

Slips in arithmetical calculations are indicated by: AM=“Arithmetical Mistakes.”

(5.1) Simple mistakes in addition occur sometimes, and are easily corrected. A mistake in carrying ten is a typical example.

The symbolic representation is AM [c. 10] which stands for “Arithmetical Mistake in carrying ten.”

(5.2) Sometimes we find that both the constituent measurements give correct values of all indices except one. In such cases we have strong grounds for correcting the particular index which is discrepant.

Vol. I, p. 17, Bengal Bauri No. 5, the Vertico-Bimalar index is given as (53.1) ; the calculated value is (56.0). The figure (218) for “Height, vertex to chin” agrees with the 3 indices: Vertico-cephalic, Vertico-frontal, and Vertico-zygomatic. The figure (122) for Bimalar breadth agrees with the Nasomalar index. We are therefore justified in correcting the Vertico-bimalar index and adopting the calculated value (56.0).

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In such cases we shall indicate the nature of the correction by the symbol AM [CC] which signifies "Arithmetical Mistake: corrected by cross-checking with other Indices."

(5.3) Sometimes the actual total of the individual figures as given by Risley does not agree with his average. But when the total of the corrected figures is taken the agreement is satisfactory. In such cases the individual corrections may be adopted with certainty, the inference being that mistakes in printing the individual figures occurred after the original calculations were completed, possibly during the subsequent stages of copying, setting up in type, proof-reading, etc.

The symbolic indication is AM[CT=RT] which may be read as "Arithmetical Mistake: Corrected total equal to Risley's total."

(5.4) Similarly sometimes the corrected individual figures although not in complete agreement with the given average, show distinctly better agreement than the uncorrected figures. Here although we are not on such strong grounds as in the previous case, I think the corrections are at least plausible.

In such cases the symbol is slightly modified as AM[CT→RT] which signifies "Arithmetical Mistake: Corrected total agrees approximately with Risley's total."

### (6) CROSS CHECKS.

(6.1) As already indicated, the adopted correction can often be verified by cross checks. In (5.2) above, for example, the correction in the Vertico-bimalar index is supported by the fact that the reading (218) for Hvt (Height, vertex to chin) agrees with the 3 indices: VcI (Vertico-cephalic Index), VfI (Vertico-frontal Index), and VzI (Vertico-zygomatic Index), while the figure (122) for Bm (Bimalar breadth) agrees with NmI (Naso-malar Index).

We can represent this case by the symbol: CC [(212) Hvt (VcI, VfI, VzI); (122) Bm (NmI)] which may be read as "Cross Check: (212) Hvt agrees with VcI, VfI, and VzI; also (122) Bm agrees with NmI."

(6.2) In the above example we have cross-checks available for both the constituent measurements. In certain cases a cross-check is available for only one of the measurements. For example in Vol. I, p. 26, Brahman No. 63, Cephalic Index, the value (155) for Cb (Cephalic breadth) agrees with the given value (64.0) of the VcI (Vertico-cephalic Index). We, therefore, indicate the situation by the symbol: C [(155) Cb (VcI)] which may be read as "Cross-check: (155) for Cb checks with VcI."

It will be noticed that double checks are represented by [CC], while single checks are labelled [C.]

(6.3) Again as in (5.3) above, the corrected value sometimes agrees completely with Risley's total. For example, consider Vol. II, p. 103, Mahomedan No. 17, Cephalic Length (088). The corrected value is clearly (188). This corrected value (188) agrees completely with the total given by Risley. We can indicate such checks in the following way: C1 (188) [CT=RT] which may be read as "Adopting C1 (188) the corrected total is identically equal to Risley's total."

(6.4) It has been pointed out in (5.4) above that sometimes the Corrected Total is not identical with Risley's Total, but shows distinctly improved agreement. In such cases the symbol may be modified as follows:—C1 (202)[CT→RT] which signifies "Adopting C1 (202) the corrected total shows better agreement with Risley's total."

(6.5) When one component of an index-figure can be verified by a cross-check, a discrepancy in an index-figure can be removed either (a) by correcting the other component, or (b) by correcting the index-figure itself. It may sometimes happen that the first alternative (a) is excluded by the fact that retaining the verified component no suitable value of the other component can be found to yield the given index figure.

For example, Vol. I, p. 24, Bengal Brahman No. 40, Cephalic Index is given as (74.1). The Cephalic breadth (145) agrees satisfactorily with the given value of the Vertico-Cephalic Index and is thus verified. Using (145) as the Cephalic breadth no suitable (integral) value of the Cephalic length can be found to yield a Cephalic Index of (74.1). The Cephalic Index itself should therefore be corrected.

The following symbol has been adopted in these cases. Cb (145) [CI ≠ CI (74.1)] which may be read as "Retaining Cb (145) no suitable value of CI will yield given CI (74.1)."

A full list of the correction symbols is given in Table 2(B).

TABLE 2(B). LIST OF SYMBOLS USED FOR DESCRIBING NATURE OF MISTAKES.

(2.1)	PM[0]	...	...	Printing mistake in the position of the decimal point.
(2.2)	PM[tr.(0)/(1)]	...	...	Printing mistake: transposition of (0) and (1).
(2.3)	PM[(0)/(1)]	...	...	Printing mistake: (0) used in place of (1).
(2.4)	PM[i.(9)/(6)]	...	...	Printing mistake: (9) interchanged for (6).
(2.5)	PM[a.c.(5)/(2)]	...	...	Printing mistake: adjoining columns interchanged (5) for (2).
(2.6)	PM[a.r.(5)/(2)]	...	...	Printing mistake: adjoining rows interchanged, (5) for (2).
(3.1)	WT[(126)/(127)]	...	...	Wrong Table entry under (126) instead of under (127).
(4.1)	WF[a.c.(201)/(183)]	...	...	Wrong figure (201) used from adjoining column instead of correct figure (183).
(4.2)	WF[a.r.(201)/(183)]	...	...	Wrong figure (201) used from adjoining row instead of correct figure (183).
(5.1)	AM[c.10]	...	...	Arithmetical mistake in carrying ten.
(5.2)	AM[C.C.I]	...	...	Arithmetical mistake corrected by cross-checking other indices.
(5.3)	AM[CT=RT]	...	...	Arithmetical mistake: corrected total equal to Risley's total.
(5.4)	AM[CT→R]	...	...	Arithmetical mistake: corrected total agrees approximately with Risley's total.
(6.1)	CC[(212) Hvt (VcI, VfI, VzI); (122) Bm(NmI)]	...	...	Cross checks: (212) Hvt agrees with VcI, VfI, and VzI; also (122) Bm agrees with NmI.
(6.2)	C[(155)Cb(VcI)]	...	...	Cross check: (155) for Cb agrees with VcI.
(6.3)	CI(188)[CT=RT]	...	...	Adopting CI (188) the corrected total is identically equal to Risley's total.
(6.4)	CI(202)[CT→RT]	...	...	Adopting CI (202) the corrected total shows better agreement with Risley's total.
(6.5)	Cb(145) [CI ≠ CI (74.1)]	...	...	Retaining Cb (145) no suitable value of CI will yield given CI (74.1).
(7.1)	Cor. Ind. [Av.=]	...	...	Corrected value of Index itself is adopted, different sets of averages are approximately equal.
(7.2)	Cor. ?? [Av. ≠]	...	...	Doubtful correction. Averages not in agreement.

# RISLEY'S ANTHROPOMETRIC DATA FOR BENGAL

## (7) DOUBTFUL CORRECTIONS.

The last two symbols in Table 2(B) are introduced for indicating doubtful corrections. In a small number of residual cases the discrepancies cannot be reconciled satisfactorily as the source of the mistakes cannot be traced with certainty. Discrepancies in index-figures may be removed by (1) correcting the index-figure itself, or (2) by correcting the numerator, or (3) by correcting the denominator.

In such cases all three methods were used, and 3 different sets of average values were calculated.

(7.1) If we find that the three sets of average values do not differ appreciably, then it is clearly immaterial which particular correction is adopted. In accordance with Rule I, however, we should adopt the first alternative, that is, correct the index-figure itself. Such cases will be indicated by the symbol Cor. Ind. [Av.=] which signifies "Corrected value of Index itself is adopted, different sets of Averages are approximately equal."

(7.2) On the other hand, if we find that the 3 sets of average values are differing appreciably, then it is impossible to adopt any of the corrections with confidence. The figure must be used with great caution, or should be preferably rejected altogether. In such cases we shall use the symbol Cor. ?? [Av $\dagger$ ] to indicate "Doubtful correction, Averages not in agreement."

## CORRECTIONS IN INDIVIDUAL MEASUREMENTS.

Corrections in Individual Measurements are given in Table 3. Column (1) gives the serial number of the correction, while columns (2), (3), (4) and (5) refer respectively to the page, caste, character and the Table and individual serial number of Risley's volumes. Column (6) is Risley's measurement as *actually printed*, and column (7) the actual calculated value for indices (adopting component figures as actually given). Column (8) gives the value finally adopted. Column (9) gives the discrepancy, *i.e.* the difference between Risley's figure given in column (6) and the adopted value given in column (8). Column (10) shows the component figures in the case of indices. Column (11) shows the nature of the discrepancies and the cross-checks if any (using the symbols explained in Table 2(B)). Column (12) contains special remarks, if any, and also gives the classification of the correction under the heads (A-1), (A-2), (B), (C), and (D) as defined below.

Corrections of individual figures may be classified in the following way:—

(A-1) There is no doubt regarding the validity of the correction. For example, Vol. I, p. 3, Bengal Bagdi Vertico-frontal Index printed as 4.73, corrected to 47.3. In this category have been placed obvious printing mistakes, and mistakes caused by entering the index-table in the adjoining column or row, where the correction is supported by cross checks.

(A-2) There is practically no doubt regarding the validity of the correction. For example, when the mistake has occurred by a wrong entry in Index-Table caused by a not unlikely confusion between figures such as 3 and 8, 1 and 7, etc., and where the correction is supported by cross checks.

(B) The correction although plausible cannot be considered absolutely certain. In such cases alternative averages have been calculated for comparison, and have been found to differ only slightly from adopted averages.

(C) The correction is doubtful. But the differences between alternative averages are small and possibly negligible. Hence the average values in such cases may be used with safety.

(D) The correction is doubtful, and alternative averages differ considerably. It is not safe to use these measurements which should be rejected.

TABLE 3. LIST OF INDIVIDUAL CORRECTIONS.

Serial No.	Page	Caste	Character	Table and No.	Risley's value	Calculated value	Adopted value	Discrepancy	Component Parts	Individual Correction	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	3	Bágni	VfI	I 15	47.3	47.3	47.3	+42.57	...	P M [ 0 ]	A-1
2	7	"	"	I 81	47.8	45.8	45.8	- 2.0	Fb 94 Hvc 205	CC [ (94) Fb (FzI, VfI); (205) Hvc (VcI, VbI, VzI) ]	A-2
3	17	Báuri	VbI	I 5	53.1	55.96	56.0	+ 2.9	Bm 122 Hvc 218	CC [ (122) Bm (NmI); (218) Hvc (VcI, VfI, VzI) ]	A-2
4	20	"	Fb	II 14	110	...	101	- 9.0	...	P M [ tr. (o)/(1) ] CC [ (101) Fb (FzI, VfI) ]	A-1
5	23	Brahman	CI	I 23	75.2	71.1	71.1	- 4.1	Cb 131 CI 184	WT [ (174)/(184) ] C [ (131) Cb (VcI) ] [ See No. 12 ]	A-2
6	24	"	"	I 40	74.1	77.1	77.1	+ 3.0	Cb 145 CI 188	C [ (145) Cb (VcI) ] Cb (145) [ CI ≠ CI (74.1) ]	A-2
7	26	"	"	I 63	83.7	82.4	82.4	- 1.3	Cb 155 CI 188	WT [ (185)/(188) ] C [ (155) Cb (VcI) ]	A-2
8	25	"	FzI	I 56	77.0	76.5	76.5	- 0.5	Fb 101 Bz 132	CC [ (101) Fb (FzI, VfI); (132) Bz (FzI, VzI) ]	A-2
9	29	"	"	I 100	80.1	79.5	79.5	- 0.6	Fb 101 Bz 127	WT [ (126)/(127) ] CC [ (101) Fb (FzI, VfI); (127) Bz (VzI, FzI) ]	A-1
10	21	"	VcI	I 2	64.4	64.0	64.0	- 0.4	Cb 144 Hvc 225	WT [ (145)/(144) ] CC [ (144) Cb (VcI); (225) Hvc (VfI, VzI) ]	A-1
11	22	"	"	I 18	67.7	67.4	67.4	- 0.3	Cb 147 Hvc 218	WT [ (217)/(218) ] CC [ (147) Cb (VcI); (218) Hvc (VfI, VzI) ]	A-1
12	23	"	"	I 23	60.6	60.3	60.3	- 0.3	Cb 131 Hvc 217	WT [ (216)/(217) ] C [ (217) Hvc (VfI, VzI) ]	A-1
13	23	"	VcI	I 25	71.7	70.0	70.0	- 0.7	Cb 145 Hvc 207	WT [ (202)/(207) ] CC [ (145) Cb (CI); (207) Hvc (VfI, VzI) ]	A-1
14	23	"	"	I 27	69.6	69.1	69.1	- 0.5	Cb 148 Hvc 214	WT [ (149)/(148) ] CC [ (148) Cb (CI); (214) Hvc (VfI, VzI) ]	A-1
15	25	"	"	I 50	56.8	61.2	61.2	+ 4.4	Cb 142 Hvc 232	WT [ (132)/(142) ] CC [ (142) Cb (CI); (232) Hvc (VfI, VzI) ]	A-1
16	26	"	"	I 68	63.9	63.6	63.6	- 0.3	Cb 140 Hvc 220	WT [ (219)/(220) ] CC [ (140) Cb (CI); (220) Hvc (VfI, VzI) ]	A-1
17	28	"	"	I 93	69.4	67.1	67.1	- 2.3	Cb 143 Hvc 213	WT [ (218)/(213) ] CC [ (143) Cb (CI); (213) Hvc (VfI, VzI) ]	A-1
18	28	"	VfI	I 89	47.4	49.5	49.5	+ 2.1	Fb 111 Hvc 234	[ See No. 23 ]	B
19	28	"	VzI	I 90	67.2	57.2	57.2	- 10.0	Bz 119 Hvc 208	PM [ j 6/5 ] CC [ (119) Bz (FzI); (208) Hvc (VcI, VzI) ]	A-1
20	23	"	"	I 21	61.3	61.6	61.6	+ 0.3	Bz 127 Hvc 206	WT [ (207)/(206) ] CC [ (127) Bz (FzI); (206) Hvc (VcI, VfI) ]	A-1
21	24	"	"	I 39	58.5	58.8	58.8	+ 0.3	Bz 127 Hvc 216	WT [ (217)/(216) ] CC [ (127) Bz (FzI); (216) Hvc (VcI, VfI) ]	A-1
22	25	"	"	I 51	63.5	63.2	63.2	- 0.3	Bz 131 Hvc 207	WT [ (206)/(207) ]	A-1

TABLE 3. LIST OF INDIVIDUAL CORRECTIONS—Contd.

Serial No.	Page	Caste	Character	Table and No.	Risley's value	Calculated value	Adopted value	Discrepancy	Component Parts	Individual Correction	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
23	28	Brahman	Hvc	II 89	234	...	224	-10.0	... ..	CC [(224) Hvc (VcI, VzI) [See No. 18]	B
24	42	Chandál	CI	I 34	78.7	79.5	79.5	+0.8	Cb 148 Cl 186	WT [188/186] C [(148) Cb (VcI)]	A-1
25	43	"	CI	I 59	69.6	76.5	76.5	+6.9	Cb 140 Cl 183	PM [a.c. (201)/(183)] C [(140) Cb (VcI)]	A-1
26	41	"	VbI	I 18	55.0	57.6	57.6	+2.6	Bm 109 Hvc 189	WT [(104)/(109)] CC [(109) Bm (NmI); (189) Hvc (VcI, VfI, VzI)]	A-1
27	41	"	"	I 28	51.8	52.3	52.3	+0.5	Bm 111 Hvc 212	WT [(110)/(111)] CC [(111) Bm (NmI); (212) Hvc (VcI, VfI, VzI)]	A-1
28	42	"	"	I 39	51.6	54.6	54.6	+3.0	Bm 117 Hvc 214	CC [(117) Bm (NmI); (214) Hvc (VcI, VfI, VzI)]	A-2
29	54	Goálá	Bz	II 5	227	...	127	-100	... ..	PM [(2)/(1)] C [(127) Bz (FzI, VzI)]	A-1
30	58	Kayastha	CI	I 9	74.2	76.6	76.6	+2.4	Cb 141 Cl 184	WT [(190/184)] C [(141) Cb (VcI)]	A-2
31	59	"	"	I 18	80.2	81.3	81.3	+1.1	Cb 143 Cl 182	WT [(146)/(148)] C [(148) Cb (VcI)]	A-2
32	"	"	"	I 20	77.7	75.2	75.2	-2.5	Cb 143 Cl 190	WT [(184)/(190)] C [(143) Cb (VcI)]	A-2
33	62	"	"	I 61	80.0	78.0	78.0	-2.0	Cb 142 Cl 182	C [(142) Cb (VcI)] Cb (142) [Cl ≠ CI (80.0)]	B
34	"	"	"	I 68	75.6	74.6	74.6	-1.0	Cb 141 Cl 189	WT [(143)/(141)] C [(141) Cb (VcI). Cb (141), [Cl ≠ CI (75.6)]	A-2
35	67	"	"	I 92	79.4	79.7	79.7	+0.3	Cb 142 Cl 178	PM [i (4)/(7)] C [(142) Cb (VcI)]. Cb (142) [Cl ≠ CI (79.4)]	A-2
36	58	"	FzI	I 8	82.9	78.2	78.2	-4.7	Fb 101 Bz 129	WT [(107)/(101)] CC [(101) Fb (VfI, FzI); (129) Bz (VzI, FzI)]	A-1
37	59	"	FzI	I 20	77.3	77.7	77.7	+0.4	Fb 98 Bz 126	WT [(99)/(98)] CC [(98) Fb (VfI, FzI); (126) Bz (VzI, FzI)]	A-1
38	"	"	"	I 23	81.1	80.1	80.1	-1.0	Fb 105 Bz 131	PM [i (1)/(0)] CC [(105) Fb (VfI, FzI); (131) Bz (VzI, FzI)]	A-1
39	60	"	"	I 30	81.9	81.3	81.3	-0.6	Fb 100 Bz 123	WT [(122)/(123)] CC [(100) Fb (VfI, FzI); (123) Bz (VzI, FzI)]	A-1
40	"	"	VcI	I 33	69.4	69.7	69.7	+0.3	Cb 150 Hvc 215	WT [(216)/(215)] CC [(150) Cb (CI); (215) Hvc (VfI, VzI, VcI)]	A-1
41	63	"	VfI	I 81	62.5	44.4	44.4	-18.1	Fb 101 Hvc 227	WF [a.c. (142)/(101)] CC [(101) Fb (FzI, VfI); (227) Hvc (VcI, VfI, VzI)]	A-1
42	63	"	"	I 89	50.7	50.9	50.9	+0.2	Fb 106 Hvc 208	WT [(209)/208] CC [(106) Fb (FzI, VzI), (208) Hvc (VcI, VfI, VzI)]	A-1
43	58	"	VzI	I 11	50.4	57.4	57.4	+7.0	Bz 116 Hvc 202	CC [(116) Bz (FzI, VzI); (202) Hvc (VcI, VfI, VzI)]	A-1
44	59	"	"	I 16	60.2	70.2	70.2	+10.0	Bz 137 Hvc 195	PM [(60)/(70)] CC [(137) Bz (FzI); (195) Hvc (VcI, VzI)]	A-1

TABLE 3. LIST OF INDIVIDUAL CORRECTIONS—Contd.

Serial No.	Page	Caste	Character	Table and No.	Risley's value	Calculated value	Adopted value	Discrepancy	Component Parts	Individual Correction	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
45	63	Kayastha	VzI	I 80	45.3	60.1	60.1	+14.8	Bz 122 Hvc 203	WT [(92)/(122)] CC [(122) Bz (FzI) ; (203) Hvc (VcI, VfI)]	A-1
46	"	"	"	I 85	50.4	59.9	59.9	+ 9.5	Bz 121 Hvc 202	CC [(121) Bz (FzI) ; (202) Hvc (VcI, VfI)]	A-2
47	73	"	Hvt	II 83	87	...	137	...	...	PM [(0)/(1)]	A-1
48	71	"	Hvc	II 61	127	...	227	...	...	PM [(1)/(2)] C [(227) Hvc (VcI, VfI, VzI)]	A-1
49	76	Koibarta	CI	I 20	86.9	86.3	86.3	- 0.6	Cb 145 Cl 168	WT [(146)/(145)] C [(145) cb (VcI)]	A-2
50	77	"	"	I 40	81.2	75.4	75.4	- 5.8	Cb 141 Cl 187	Cb (141) [ Cl $\frac{1}{2}$ CI (81.2) ] C [(141) Cb (VcI) ]	B
51	76	"	Fz I	I 22	80.0	80.8	80.8	+ 0.8	Fb 101 Bz 125	WT [(100)/(101)] CC [ (101) Fb (VfI) ; (125) Bz (VzI) ]	A-1
52	80	"	"	I 81	76.5	75.0	75.0	- 1.5	Fb 98 Bz 128	WT [(98)/(96)] CC [ (96) Fb (VfI) ; (128) Bz (VzI) ]	A-1
53	77	"	Vf I	I 37	51.4	48.5	48.5	- 2.9	Fb 101 Hvc 208	WT [(107)/(101)] CC [ (101) Fb (FzI) ; (208) Hvc (VcI, VzI) ]	A-1
54	91	Mahomedans	Nm I	I 19	115.5	114.5	114.5	- 1.0	Nm 134 Bb 117	WT [(116)/(117)] C [ (:17) Bb (VbI) ]	A-2
55	"	"	"	I 20	111.3	115.3	115.3	+ 4.0	Nm 128 Bb 111	WT [ (115)/(111) ] C [ (111) Bb (VbI) ]	A-2
56	94	"	"	I 64	109.0	108.1	108.1	- 0.9	Nm 120 Bb 111	WT [ (110)/(111) ] C [ (111) Bb (VbI) ]	A-2
57	98	"	"	I 130	115.0	111.5	111.5	- 3.5	Nm 126 Bb 113	WT [ (130)/(126) ] C [ (113) Bb (VbI) ]	A-1*
58	"	"	"	I 137	115.0	111.5	111.5	- 3.5	Nm 126 Bb 113	WT [ (130)/(126) ] C [ (113) Bb (VbI) ]	A-1*
59	99	"	"	I 151	111.9	110.9	110.9	- 1.0	Nm 122 Bb 110	WT [ (109)/(110) ] C [ (110) Bb (VbI) ]	A-2
60	"	"	"	I 155	111.5	121.1	121.1	+ 9.6	Nm 126 Bb 104	WT [ (116)/(126) ] C [ (104) Bb (VbI) ]	A-2
61	101	"	NmI	I 178	112.1	102.5	102.5	- 9.6	Nb 120 Bb 117	WT [(107)/(117)] C [ (117) Bb (VbI) ]	A-2
62	"	"	"	I 185	111.1	112.9	112.9	+1.8	Nb 122 Bb 108	WT [(120)/(122)] C [(108) Bb (VbI)]	A-2
63	94	"	CI	I 71	82.4	82.8	82.8	+0.4	Cb 150 Cl 181	WT [(182)/(181)] C [(150) Cb (VbI)]	A-2
64	97	"	"	I 97	82.8	82.8	82.8	+74.52	Cb 145 Cl 175	PM [ 0   CI (82.8) ] [ CT=RT ]	A-1
65	91	"	FzI	I 15	83.8	80.2	80.2	-3.6	Fb 110 Bz 137	CC [ (110) Fb (VfI) ; (137) Bz (VzI) ]	A-2
66	94	"	"	I 68	78.1	78.6	78.6	+0.5	Fb 107 Bz 136	WT [ (137)/(136) ] CC [ (107) Fb (VfI); (136) Bz (VzI) ]	A-1
67	101	"	"	I 183	77.4	78.0	78.0	+0.6	Fb 103 Bz 132	WT [ (133)/(132) ] CC [ (103) Fb VfI ; (132) Bz (VzI) ]	A-1

\* Note 1. p. 91.

TABLE 8. LIST OF INDIVIDUAL CORRECTIONS—Contd.

Serial No.	Page	Caste.	Character	Table and No.	Risley's value	Calculated value	Adopted value	Discrepancy	Component Parts	Individual Correction	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
68	90	Mahomedans	VcI	I 13	69·6	66·6	66·6	-3·0	Cb 144 Hvc 216	PM [ ((9)/(6) ) CC [ (144) Cb (CI) ; (216) Hvc (VI, VzI) ]	A-1
69	95	"	"	I 90	67·1	71·9	71·9	+4·8	Cb 149 Hvc 207	WT [ (139)/(149) ] CC [ (149) Cb (CI) ; (207) Hvc (VI, VzI) ]	A-1
70	92	"	VbI	I 39	63·1	53·1	53·1	-10·0	Bb 118 Hvc 222	PM [ i (5)/(6) ] VbI (53·1) [ CT=RT ]	A-2
71	95	"	"	I 88	57·0	54·5	54·5	-2·5	Bb 109 Hvc 200	WF [ a.c. (114)/(119) ] CC [ (109) Bb (NmI), (200) Hvc (VcI, VI, VzI) ]	A-1
72	100	"	"	I 161	63·4	53·4	53·4	-10·0	Bb 115 Hvc 215	PM [ i (6)/(5) ] ; VbI (53·4) [ CT=RT ] CC [ (115) Bb (NmI) ; (215) Hvc (VcI, VI, VzI) ]	A-1
73	101	"	VbI	I 178	55·1	60·3	60·3	+5·2	Bb 117 Hvc 194	WT [ (107)/(117) ] CC [ (117) Bb (NmI) ; (194) Hvc (VcI, VI, VzI) ]	A-1
74	100	"	VfI	I 168	50·0	45·0	45·0	-5·0	Fb 100 Hvc 222	WT [ (200)/(222) ] CC [ (110) Fb (FzI) ; (292) Hvc (VcI, VbI, VzI) ]	A-1
75	90	"	VzI	I 6	61·2	59·0	59·0	-2·2	Bz 131 Hvc 222	PM [ a.r. (136)/(131) ] CC [ (131) Bz (FzI) ; (222) Hvc (VcI, VI, VbI) ]	A-1
76	91	"	"	I 19	64·5	66·5	66·5	+2·0	Bz 135 Hvc 203	PM [ a.r. (131)/(135) ] CC [ (135) Bz (FzI) ; (203) Hvc (VcI, VbI, VI) ]	A-1
77	93	"	"	I 53	56·2	66·1	66·1	+9·9	Bz 133 Hvc 201	WT [ (113)/(133) ] CC [ (133) Bz (FzI) ; (201) Hvc (VcI, VbI, VI) ]	A-1
78	96	"	"	I 95	65·5	67·4	67·4	+1·9	Bz 137 Hvc 203	PM [ a.r. (139)/(137) ] CC [ (137) Bz (FzI) ; (203) Hvc (VcI, VbI, VI) ]	A-1
79	"	"	"	I 114	55·0	65·1	65·1	+10·1	Bz 129 Hvc 198	WT [ (109)/(129) ] CC [ (129) Bz (FzI) ; (198) Hvc (VcI, VI, VbI) ]	A-1
80	99	"	"	I 151	63·3	59·6	59·6	-3·7	Bz 130 Hvc 218	WT [ (138)/(130) ] CC [ (130) Bz (FzI) ; (218) Hvc (VcI, VbI, VI) ]	A-1
81	103	"	Cl	II 17	088	...	188	...	...	PM [ (0) / (1) ] Cl (188) [ CT=RT ]	A-1
82	113	"	Cb	II 167	141	...	147	...	...	PM [ (141)/(147) ] C [ (147) Cb (CI, VcI) ]	A-1*
83	"	"	"	II 168	147	...	141	...	...	PM [ (147)/(141) ] C [ (141) Cb (CI, VcI) ]	A-1*
84	"	"	Fb	II 167	102	...	100	...	...	C [ (100) Fb (FzI, VI) ]	A-2
85	110	"	Nw	II 127	89	...	39	...	...	PM [ (8)/(3) ] Nw(83) [ CT=RT ]	A-1
86	119	Malé	VcI	I 26	64·8	64·6	64·6	-0·2	Cb 141 Hvc 218	PM [ a.c. (142)/(141) ] CC [ (141) Cb (CI) ; (218) Hvc (VbI, VI, VzI) ]	A-1

\* Note 2. p. 91.

TABLE 3. LIST OF INDIVIDUAL CORRECTIONS—Contd.

Serial No.	Page	Caste	Character	Table and No.	Risley's value	Calculated value	Adopted value	Discrepancy	Component Parts	Individual correction	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
87	121	Malé	VcI	I 56	63·2	62·8	62·8	-0·4	Cb 142 Hvc 216	WT [(143)/(142)] CC [(142) Cb (CI); (216) Hvc (VbI, VfI, VzI)]	A-1
88	118	"	VbI	I 13	57·6	58·7	58·7	+1·1	Bb 108 Hvc 184	WT [(186) / (184)] CC [(108) Bb (NmI); (184) Hvc (VcI, VfI, VzI)]	A-1
89	"	"	"	I 15	47·9	49·7	49·7	+1·8	Bb 108 Hvc 217	PM [tr. (7) / (9)] CC [(108) Bb (NmI); (217) Hvc (VcI, VfI, VzI)]	A-1
90	"	"	"	I 65	63·6	53·6	53·6	-10·0	Bb 104 Hvc 194	PM [(6) / (5)]; VbI (53·6) [CT=RT] CC [(104) Bb (NmI); (194) Hvc (VcI, VfI, VzI)]	A-1
91	123	"	Bb	II 28	104	...	106	...	...	C [(106) Bb (NmI) (VbI)]	A-2
92	136	Málpáhári	NmI	I 80	100·8	109·8	109·8	+9·0	Nm 112 Bb 102	PM [(0) / (9)] C [(102) Bb (VbI)]	A-2
93	135	"	VcI	I 70	75·0	70·5	70·5	-4·5	Cb 141 Hvc 200	PM [tr. (5)/(0)] CC [(141) Cb (CI); (200) Hvc (VbI, VfI, VzI)]	A-1
94	132	"	VbI	I 21	53·9	53·0	53·0	-0·9	Bb 103 Hvc 198	PM [(9)/(0)] CC [(103) Bb (NmI); (198) Hvc (VcI, VfI, VzI)]	A-1
95	136	"	VfI	I 83	44·7	51·0	51·0	+6·3	Fb 98 Hvc 192	CC [(98) Fb (FzI); (192) Hvc (VcI, VfI, VzI)]	A-2
96	140	"	Cb	II 38	36	...	136	...	...	P M [(0) / (1)] C [(136) Cb (CI, VcI)]	A-1
97	146	Muchi	CI	I 5	78·4	78·9	78·9	+0·5	Cb 139 Cl 176	WT [(138)/(139)] C [(139) Cb (VcI)]	A-2
98	"	"	FzI	I 7	79·1	78·0	73·0	-6·1	Fb 95 Bz 130	WF [a.c. (120) / (130)] CC [(95) Fb (VfI); (130) Bz (VzI)]	A-1
99	147	"	VzI	I 25	62·7	61·3	61·3	-1·4	Bz 130 Hvc 212	WT [(133)/(130)] CC [(130) Bz (FzI); (212) Hvc (VcI, VfI, VbI)]	A-1
100	153	Pod	CI	I 44	78·7	79·2	79·2	+0·5	Cb 153 Cl 193	WT [(152)/(153)] C [(153) Cb (VcI)]	A-2
101	151	"	NmI	I 29	111·2	112·2	112·2	+1·0	Nm 110 Bb 98	WT [(109)/(110)] C [(98) Bb (VbI)]	A-2
102	152	"	"	I 32	109·0	109·4	109·4	+0·4	Nm 104 Bb 95	C [(95) Bb (VbI)]	B
103	153	"	"	I 43	110·7	111·7	111·7	+1·0	Nm 114 Bb 102	WT [(113)/(114)] C [(102) Bb (VbI)]	A-2
104	"	"	"	I 52	104·1	107·2	107·2	+3·1	Nm 104 Bb 97	C [(97) Bb (VbI)]	B
105	156	"	FzI	I 97	76·3	75·2	75·2	-1·6	Fb 94 Bz 125	WT [(96)/(94)] CC [(94) Fb (VfI); (125) Bz (VzI)]	A-1
106	150	"	VcI	I 9	69·6	68·6	68·6	-1·0	Cb 148 Hvc 201	WF [a.c. (140) / (138)] CC [(138) Cb (CI); (201) Hvc (VbI, VfI, VzI)]	A-1
107	168	Rajbansi	NmI	I 38	114·3	111·3	111·3	-3·0	Nm 108 Bb 106	PM [(1) / (4)] C [(106) Bb (VbI)]	A-2
108	170	"	"	I 67	104·1	114·5	114·5	+10·4	Nm 100 Bb 96	PM [(0) / (1)] C [(96) Bb (VbI)]	A-2
109	170	"	NmI	I 70	110·0	100·0	100·0	-10·0	Nm 100 Bb 100	PM [(1) / (0)] C [(100) Bb (VbI)]	A-2
110	166	"	CI	I 10	68·5	69·5	69·5	+1·0	Cl 135 Cl 191	WT [(197)/(194)] C [(135) Cb (VcI)]	A-2
111	170	"	"	I 69	72·7	68·0	68·0	-4·7	Cl 130 Cl 191	WT [(139)/(130)] C [(130) Cb (VcI)]	A-2

TABLE 3. LIST OF INDIVIDUAL CORRECTIONS—Contd.

Serial No.	Page	Caste	Character	Table and No.	Risley's value	Calculated value	Adopted value	Discrepancy	Component Parts	Individual correction	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
112	171	"	"	I 78	75.5	78.1	78.1	+2.6	Cb 150 Cl 192	Cb (142) [Cl ≠ CI (75.5)] C [(150) Cb (VcI)]	B
113	"	"	"	I 91	77.2	70.2	70.2	-7.0	Cb 132 Cl 183	WF [a.c. (139)/(132)] C [(132) Cb (VcI)]	A-2
114	"	"	"	I 92	73.1	77.2	77.2	+4.1	Cb 139 Cl 180	WT [(190)/(180)] C [(139) Cb (VcI)]	A-2
115	168	"	FzI	I 36	79.5	78.5	78.5	-1.0	Fb 106 Bz 135	PM [(8)/(9)] CC [(106) Fb (VfI); (135) Bz (VzI)]	A-1
116	171	"	"	I 85	77.4	74.6	74.6	-2.8	Fb 103 Bz 133	WT [(133)/(138)] CC [(103) Fb (VfI); (133) Bz (VzI)]	A-1
117	166	"	VcI	I 7	64.8	74.7	74.7	+9.9	Cb 142 Hvc 190	WF [a.c. (133)/(142)] CC [(142) Cb (CI); (190) Hvc (VbI, VzI, VfI) [Note 3]]	A-1
118	"	"	"	I 8	63.2	64.8	64.8	+1.6	Cb 143 Hvc 205	WF [a.c. (138)/(133)] CC [(143) Cb (CI); (205) Hvc (VbI, VzI, VfI)]	A-1
119	171	"	"	I 38	65.8	63.8	63.8	-2.0	Cb 141 Hvc 221	PM [i (5)/(3)] CC [(141) Cb (CI); (221) Hvc (VbI, VfI VzI)]	A-1
120	166	"	VbI	I 7	55.6	57.3	57.3	+1.7	...	[Note 3]	A-1
121	166	Rajbansi	VbI	I 8	52.8	55.6	55.6	+2.8	...	[Note 31]	A-1
122	167	"	"	I 15	73.7	57.7	57.7	-18.0	Bb 112 Hvc 194	PM [tr. (7)/(5)] CC [(112) Bb (NmI); (194) Hvc (VcI, VzI, VfI)]	A-1
123	166	"	VfI	I 7	47.8	53.1	53.1	+5.3	...	[Note 3]	A-1
124	"	"	"	I 8	45.2	47.8	47.8	+2.6	...	[Note 3]	A-1
125	"	"	VzI	I 7	63.9	66.3	66.3	+2.4	...	[Note 3]	A-1
126	"	"	"	I 8	61.7	63.9	63.9	+2.2	...	[Note 3]	A-1
127	"	"	"	I 21	62.9	62.3	62.3	+0.4	Bz 139 Hvc 223	WT [(221)/(223)] CC [(139) Bz (FzI); (223) Hvc (VfI, VcI, VbI)]	A-1
128	168	"	"	I 33	57.6	62.2	62.2	+4.6	Bz 135 Hvc 217	WT [(125)/(135)] CC [(135) Bz (FzI); (217) Hvc (VfI, VcI, VbI)]	A-1
129	"	"	Fb	II 90	102	...	103	...	...	PM [(2)/(3)] C [(103) Fb (VfI, FzI)]	A-1
130	"	"	"	II 94	103	...	102	...	...	PM [(3)/(4)] C [(102) Fb (VfI, FzI)]	A-1
131	178	Rajbansi	Hvc	II 75	210	...	212	...	...	C [(212) Hvc (VcI, VbI, VfI, VzI)]	A-2
132	181	Sadgop	CI	I 14	72.9	72.7	72.7	-0.2	...	WF [(192)/(191)]	A-2
133	181	"	CI	I 26	77.9	77.8	77.8	+0.2	Cb 144 Cl 185	Cb (144) [Cl ≠ C [(77.6)] C [(144) Cb (CI)]]	A-1
134	180	"	VfI	I 4	49.5	48.1	48.1	-1.4	Fb 102 Hvc 212	WF [a.c. (105)/(102)] CC [(102) Fb (FzI); (212) Hvc (VcI, VzI)]	A-2
135	180	"	"	I 6	66.0	48.2	48.2	-17.8	Fb 102 Hvc 225	Cor. Ind. [Av. = ] CC [(102) Fb (FzI); (225) Hvc (VcI, VzI)]	A-2
136	181	"	"	I 19	82.6	42.6	42.6	-40.0	Fb 102 Hvc 225	Cor. Ind. [Av. = CC (96) Fb (FzI); (225) Hvc (VcI, VzI)]	A-2

TABLE 3. LIST OF INDIVIDUAL CORRECTIONS — Concl'd.

Serial No.	Page	Caste	Character	Table and No.	Risley's value	Calculated value	Adopted value	Discrepancy	Component Parts	Individual correction	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
137	180	"	VzI	I 3	57.8	59.8	59.8	+ 2.5	Bz 125 Hvc 209	CC [ (125) Bz (FzI); (209) Hvc (VcI, VFI) ]	A-2
138	181	"	"	I 15	62.8	63.8	63.8	+ 1.0	Bz 127 Hvc 199	WF [ a. c. (125)/(127) ] CC [ (127) Bz (FzI); (199) Hvc (VcI, VFI) ]	A-1
139	181	"	"	I 17	65.2	64.5	64.5	- 0.7	Bz 124 Hvc 192	WT [ (190)/(192) ] CC [ (124) Bz (FzI); (192) Hvc (VcI, VFI) ]	A-1
140	182	"	"	I 32	65.8	55.8	55.8	- 10.0	Bz 134 Hvc 240	AM [ c. 10 ] ; PM [ (6)/(5) ] CC [ (134) Bz (FzI); (240) Hvc (VcI, VFI) ]	A-1
141	187	"	Cb	II 46	184	...	134	...	...	PM [ (8)/(3) ] C [ (134) Cb (CI, VcI) ]	A-1
142	185	"	Hvt	II 20	211	...	...	...	...	Note (4)	D

Note 1. It will be noticed that in discrepancy Nos 57 and 58 (Vol. I, p. 98, Mahomedan Nos. 130 and 137) the value of Nasomalar Index is given as 115.0 instead of the corrected value 111.5 with Nasal width = 126 and Bimalar breadth = 113 (p. 111, Mahomedan Nos. 130 and 137). It appears likely that a mistake was made in preparing the Index Table itself, and 115.0 was used there in the place of 111.5.

Note 2. In Vol. I, p. 113, it will be noticed that the figure for the Cephalic breadth of Mahomedan No. 167 is given as 141, and the Cephalic breadth of Mahomedan No. 168 is given as 147. These give rise to discrepancies in the Cephalic and the Vertico-cephalic indices. But if we interchange 141 and 147, the discrepancies Nos. 82 and 83 are reconciled. It is clear that the figures in two adjoining rows had got interchanged.

Note 3. In discrepancies Nos. 120-126 a curious mistake can be traced. In Vol. I, p. 166, Rajbansi the following figures are found:—

	(9) Vertico- Cephalic	(10) Vertico- Bimalar	(11) Vertico- Frontal	(12) Vertico- Bizygomatic
7. Shomashan Das	...	55.6	47.8	63.9
8. Naran Das	...	52.8	45.2	61.7
9. Darpatu Das	...	52.8	45.2	61.7

On actual calculation it is found that the indices for No. 8 Naran Das are 64.8, 55.6, 47.8, and 53.9 the four identical values given for No. 7 Shomashan Das. It will also be noticed that the values given for No. 8 Naran Das are mere repetitions of the respective figures for No. 9 Darpatu Das.

It is clear then that the figures for No. 8 Naran Das were somehow shifted up into the line for No. 7 Shomashan Das, while the indices for No. 7 Shomashan Das were mislaid. The adopted values for No. 7 Shomashan Das were therefore directly calculated from the individual measurements.

Note 4. In discrepancy No. 142 (Vol. I, p. 185, Sadgop No. 20) the 'Height, vertex to tragus' is given as 211 which is also the figure given for 'Height vertex to chin.' The former is clearly wrong. As this measurement does not enter into any index, no correction can be applied.

RISLEY'S ANTHROPOMETRIC DATA FOR BENGAL

TABLE 4. CORRECTIONS IN AVERAGE VALUES

Character	No. of Individuals	Actual Total	Risley's Mean $\times n$	Risley's Mean (as printed)	Actual Mean (calculated)	Discrepancy [5]-[6]	Corrected Mean [adopted]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Caste— Bagdi.							
NI	99	7997.9	7969.5	80.5	80.8	-0.3	80.8
NmI	46	5170.5	5161.2	112.2	112.4	-0.2	112.4
CI	99	7061.0	7553.7	76.3	76.4	-0.1	76.4
FzI	99	7832.3	7821.0	79.0	79.1	-0.1	79.1
VcI	99	6756.3	6741.9	68.1	68.2	-0.1	68.2
VbI	46	2359.9	2373.6	51.7	51.3	+0.4	51.3
VfI	99	4870.0	4900.5	49.5	49.2	+0.3	49.6*
VzI	99	6206.0	6197.4	62.6	62.7	-0.1	62.7
Nh	99	4632.0	4623.3	46.7	46.8	-0.1	46.8
Nw	99	3727.0	3722.4	37.6	37.6	0	37.6
Bm	46	4876.0	4876.0	106.0	106.0	0	106.0
Nm	46	5484.0	5474.0	119.0	119.2	-0.2	119.2
Cl	99	18096.0	18087.0	182.7	182.8	-0.1	182.8
Cb	99	13818.0	13810.5	139.5	139.6	-0.1	139.6
Fb	99	10043.0	10038.6	101.4	101.4	0	101.4
Bz	99	12695.0	12691.8	128.2	128.2	0	128.2
Hvi	99	7477.0	7474.5	75.5	75.5	0	75.5
Hvt	99	12785.0	12780.9	129.1	129.1	0	129.1
Hvc	99	20266.0	20265.3	204.7	204.7	0	204.7
Caste— Báuri.							
NI	20	1685.7	1682.0	84.1	84.3	-0.2	84.3
NmI	19	2123.7	2124.2	111.8	111.8	0	111.8
CI	20	1501.1	1500.0	75.0	75.1	-0.1	75.1
FzI	20	1563.8	1562.0	78.1	78.2	-0.1	78.2
VcI	20	1357.5	1356.0	67.8	67.9	-0.1	67.9
VbI	19	1026.7	1026.0	54.0	54.0	0	54.0
VfI	20	1002.3	1000.0	50.0	50.1	-0.1	50.1
VzI	20	1281.8	1280.0	64.0	64.1	-0.1	64.1
Nh	20	922.0	922.0	46.1	46.1	0	46.1
Nw	20	776.0	776.0	38.8	38.8	0	38.8
Bm	19	2104.0	2103.3	110.7	110.7	0	110.7
Nm	19	2334.0	2352.2	123.8	123.9	-0.1	123.9
Cl	20	3701.0	3700.0	185.0	185.1	-0.1	185.1
Cb	20	2778.0	2778.0	138.9	138.9	0	138.9
Fb	20	2060.0	2050.0	102.5	103.0	-0.5	102.6‡
Bz	20	2624.0	2624.0	131.2	131.2	0	131.2
Hvi	20	1459.0	1458.0	72.9	73.0	-0.1	73.0
Hvt	20	2568.0	2568.0	128.4	128.4	0	128.4
Hvc	20	4096.0	4096.0	204.8	204.8	0	204.8
Caste— Brahman.							
NI	100	7081.1	7040.0	70.4	70.8	-0.4	70.8
CI	100	7885.8	7870.0	78.7	78.8	-0.1	78.8§
FzI	100	8158.4	8240.0	82.4	81.6	+0.8	81.6¶
VcI	100	6626.4	6610.0	66.1	66.3	-0.2	66.3
VfI	100	4830.9	4870.0	48.7	48.3	+0.4	48.2**
VzI	100	5935.8	5910.0	59.1	59.4	-0.3	59.4††
Nh	100	4971.0	4970.0	49.7	49.7	0	49.7
Nw	100	3509.0	3500.0	35.0	35.1	-0.1	35.1
Cl	100	18180.0	18180.0	181.8	181.8	0	181.8

\* CT=4910.6 (-0.1). T-3 (1,2) § CT=7883.4 (-0.1) T-3 (5, 6, 7) \*\* CT=4823.0 (+0.5) T-3 (18,19)  
 † CT=1029.6 (-0.2). T-3(3) ¶ CT=8157.3 (+0.8) T-3 (8, 9) †† CT=5936.1 (-0.3) T-3 (20-22)  
 ‡ CT=2051 (-0.1). T-3(4) || CT=6625.9 (-0.2) T-3 (10-17)

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TABLE 4. CORRECTIONS IN AVERAGE VALUES—Cont.

Character	No. of Individuals	Actual Total	Risley's Mean $\times n$	Risley's Mean (as printed)	Actual Mean (calculated)	Discrepancy [5]—[6]	Corrected Mean [adopted]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Caste— Brahman—Contd.

Cb	100	14325'0	14320'0	143'2	143'3	-0'1	143'3
Fb	100	10452'0	10560'0	105'6	104'5	+0'1	104'5
Bz	100	12816'0	12810'0	128'1	128'2	-0'1	128'2
Hvi	100	8728'0	8710'0	87'1	87'3	-0'2	87'3
Hvt	100	13349'0	13350'0	133'5	133'5	0	133'5
Hvc	100	21664'0	21660'0	216'6	216'6	0	216'5*

Caste— Chandāl.

NI	67	4970'6	4951'3	73'9	74'2	-0'3	74'2
NmI	53	6046'5	6042'0	114'0	114'1	-0'1	114'1
CI	67	5230'0	5232'7	78'1	78'1	0	78'2†
FzI	67	5225'5	5225'0	78'0	78'0	0	78'0
VcI	67	4629'7	4616'3	68'9	69'1	-0'2	69'1
VbI	53	2858'6	2867'3	54'1	53'9	+0'2	53'9‡
VfI	67	3298'5	3239'7	49'1	49'2	-0'1	49'2
VzI	67	4228'0	4221'0	63'0	63'1	-0'1	63'1
Nh	67	3329	3323'2	49'6	49'7	-0'1	49'7
Nw	67	2465	2458'9	36'7	36'8	-0'1	36'8
Bb	53	5952	5951'9	112'3	112'3	0	112'3
Nm	53	6794	6789'3	128'1	128'2	-0'1	128'2
CI	67	12282	12274'4	183'2	183'3	-0'1	183'3
Cb	67	9593	9587'7	143'1	143'2	-0'1	143'2
Fb	67	6835	6834'0	102'0	102'0	0	102'0
Bz	67	8760	8756'9	130'7	130'7	0	130'7
Hvi	67	4887	4884'3	72'9	72'9	0	72'9
Hvt	67	8704	8696'6	129'8	129'9	-0'1	129'9
Hvc	67	13900	13895'8	207'4	207'5	-0'1	207'5

Caste— Goálá.

NI	41	3058'5	3042'2	74'2	74'6	-0'4	76'6
CI	41	3171'0	3169'3	77'3	77'3	0	77'3
FzI	41	3223'3	3218'5	78'5	78'6	-0'1	78'6
VcI	41	2746'8	2742'9	66'9	67'0	-0'1	67'0
VfI	41	1973'7	1968'0	48'0	48'1	-0'1	48'1
VzI	41	2511'2	2509'2	61'2	61'2	0	61'2
Nh	41	2012	2009'0	49'0	49'1	-0'1	49'1
Nw	41	1496	1492'4	36'4	36'5	-0'1	36'5
CI	41	7539	7538'8	183'8	183'9	-0'1	183'9
Cb	41	5829	5826'1	142'1	142'2	-0'1	142'2
Fb	41	4190	4186'1	102'1	102'2	-0'1	102'2
Bz	41	5430	5330'0	130'0	132'4	-2'4	130'0§
Hvi	41	3294	3292'3	80'3	80'3	0	80'3
Hvt	41	5387	5424'3	132'3	131'4	+0'9	131'4
Hvc	41	8707	8704'3	212'3	212'4	-0'1	212'4

Caste— Kayastha.

NI	100	7070'9	7030'0	70'3	70'7	-0'4	70'7
CI	100	7836'4	7820'0	78'2	78'4	-0'2	78'3 (a)
FzI	100	7944'9	7930'0	79'3	79'4	-0'1	79'4 (b)
VcI	100	6818'8	6800'0	68'0	68'2	-0'2	68'2 (c)
VfI	100	4869'2	4830'0	48'3	48'7	-0'4	48'5 (d)

\* CT=21654'0 (+0'1) T-3 (23)

† CT=(5237'7)-0'1. T-3 (24, 25)

‡ CT=(2856'7) T-3 (26, 27, 28)

§ CT=5330 (0). T-3 (29)

(a) CT=7834'1 (-0'1) T-3 (30-35)

(b) CT=7939'0 (-0'1) T-3 (36-39)

(c) CT=6819'1 (-0'2) T-3 (40.)

(d) CT=4851'2 (-0'2) T-3 (41, 42)

RISLEY'S ANTHROPOMETRIC DATA FOR BENGAL

TABLE 4. CORRECTION IN AVERAGE VALUES—Cont.

Character	No of Individuals	Actual Total	Risley's Mean $\times n$	Risley's Mean (as printed)	Actual Mean (calculated)	Discrepancy [5]—[6]	Corrected Mean [adopted]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Caste— Kayastha—Contd.

VzI	100	6069'8	6090'0	60'9	60'7	+0'2	61'1 (e)
Nh	100	5019	5020'0	50'2	50'2	0	50'2
Nw	100	3539	3530'0	35'3	35'4	-0'1	35'4
Cl	100	18247	18240'0	182'4	182'5	-0'1	182'5
Cb	100	14288	14280'0	142'8	142'9	-0'1	142'9
Fb	100	10170	10150'0	101'5	101'7	-0'2	101'7
Bz	100	12809	12790'0	127'9	128'1	-0'2	128'1
Hvi	100	7646	7640'0	76'4	76'5	-0'1	76'5
Hvt	100	12982	13080'0	130'8	129'8	+1'0	130'8 (f)
Hvc	100	20888	20980'0	209'8	208'9	+0'9	209'9 (g)

Caste— Koibarta.

NI	100	7660'2	7620'0	76'2	76'6	-0'4	76'6
CI	100	7732'4	7730'0	77'3	77'5	-0'2	77'5 (h)
FzI	100	7931'0	7930'0	79'3	79'3	0	79'3
VcI	100	6753'5	6740'0	67'4	67'5	-0'1	67'5
VfI	100	4879'3	4870'0	48'7	48'8	-0'1	48'8 (j)
VzI	100	6150'1	6140'0	61'4	61'5	-0'1	61'5
Nh	100	4805	4800'0	48'0	48'1	-0'1	48'1
Nw	100	3668	3660'0	36'6	36'7	-0'1	36'7
Cl	100	18233	18230'0	182'3	182'3	0	182'3
Cb	100	14113	14110'0	141'1	141'1	0	141'1
Fb	100	10197	10200'0	102'0	102'0	0	102'0
Bz	100	12857	12850'0	128'5	128'6	-0'1	128'6
Hvi	100	7859	7850'0	78'5	78'6	-0'1	78'6
Hvt	100	13018	13010'0	130'1	130'2	-0'1	130'2
Hvc	100	20922	20920'0	209'2	209'2	0	209'2

Caste— Mahomedans of Eastern Bengal.

NI	185	14338'9	14337'5	77'5	77'5	0	77'5
NmI	185	21008'4	21016'0	113'6	113'6	0	113'6 (k)
CI	185	14345'8	14430'0	78'0	77'9	+0'1	78'0 (l)
FzI	185	14506'4	14485'5	78'3	78'4	-0'1	78'4 (m)
VcI	185	12761'2	12709'5	68'7	69'0	-0'3	69'0 (n)
VbI	185	10143'6	10082'5	54'5	54'8	-0'3	54'7 (o)
VfI	185	9218'7	9176'0	49'6	49'8	-0'2	49'8*
VzI	185	11731'8	11710'5	63'3	63'4	-0'1	63'3†
Nh	185	9141	9139'0	49'4	49'4	0	49'4
Nw	185	7117	7085'5	38'3	38'5	-0'2	38'2‡
Bb	185	20954	20942'0	113'2	113'3	-0'1	113'3
Nm	185	23796	23791'0	128'6	128'6	0	128'6
Cl	185	33779	33818'0	182'8	182'6	+0'2	183'1§
Cb	185	26406	26399'5	142'7	142'7	0	142'7¶
Fb	185	19067	19055'0	103'0	103'1	-0'1	103'1
Bz	185	24314	24327'5	131'5	131'4	+0'1	131'4
Hvi	185	13195	13190'5	71'3	71'3	0	71'3
Hvt	185	23712	23698'5	128'1	128'2	-0'1	128'2
Hvc	185	38321	38406'0	207'6	207'1	+0'5	207'1

(e) CT=6111'1 (-0'2) T-3 (43-46) (f) CT=13082 (0) T-3 (47) (g) CT=20988 (-0'1) T-3 (48) (h) CT=7746'0 (-0'2) T-3 (49, 50) (i) CT=7930'3 (0) T-3 (51, 52) (j) CT=4876'4 (-0'1) T-3 (53) (k) CT=21004'3 (0) T-3 (54-62) (l) CT=14420'7 (0) T-3 (63-64) (m) CT=14503'9 (0'1) T-3 (65-67) (n) CT=12762'6 (-0'3) T-3 (68-69) (o) CT=10126'3 (-0'2) T-3 (70-73) \* CT=9213'7 (-0'2) T-3 (74) † CT=11749'8 (-0'2) T-3 (75-80) ‡ CT=7067'0 (+0'1) T-3 (81) § CT=33879'0 (-0'3) T-3 (81) ¶ Figs. interchanged T-3 (82, 83) || CT=19065'0 (-0'1) T-3 (81)

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TABLE 4. CORRECTION IN AVERAGE VALUES—Cont.

Character	No. of Individuals	Actual Total	Risley's Mean $\times n$	Risley's Mean (as printed)	Actual Mean (calculated)	Discrepancy [5]—[6]	Corrected Mean [adopted]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Caste— Mál.

NI	12	1021'2	1016'4	84'7	85'1	-0'4	85'1
CI	12	928'0	926'4	77'2	77'3	-0'1	77'3
FzI	12	947'6	946'8	78'9	79'0	-0'1	79'0
VcI	12	825'9	824'4	68'7	68'8	-0'1	68'8
VfI	12	599'0	597'6	49'8	49'9	-0'1	49'9
VzI	12	758'3	757'2	63'1	63'2	-0'1	63'2
Nh	12	566	566'4	47'2	47'2	0	47'2
Nw	12	480	480'0	40'0	40'0	0	40'0
Cl	12	2197	2196'0	183'0	183'1	-0'1	183'1
Cb	12	1696	1695'6	141'3	141'3	0	141'3
Fb	12	1231	1230'0	102'5	102'6	-0'1	102'6
Bz	12	1558	1557'6	129'8	129'8	0	129'8
Hvi	12	894	894'0	74'5	74'5	0	74'5
Hvt	12	1535	1534'8	127'9	127'9	0	127'9
Hvc	12	2467	2466'0	205'5	205'6	-0'1	205'6

Caste— Malé.

NI	100	9473'6	9450'0	94'5	94'7	-0'2	94'7
NmI	100	10970'0	11000'0	110'0	109'7	+0'3	109'7
CI	100	7492'6	7480'0	74'8	74'9	-0'1	74'9
FzI	100	7651'4	7640'0	76'4	76'5	-0'1	76'5
VcI	100	6748'8	6740'0	67'4	67'5	-0'1	67'5*
VbI	100	5060'6	5030'0	50'3	50'6	-0'3	50'5†
VfI	100	4933'9	4920'0	49'2	49'3	-0'1	49'3
VzI	100	6446'6	6440'0	64'4	64'5	-0'1	64'5
Nh	100	4391	4390'0	43'9	43'9	0	43'9
Nw	100	4155	4150'0	41'5	41'6	-0'1	41'6
Bb	100	10297	10280'0	102'8	103'0	-0'2	102'9††
Nm	100	11310	11310'0	113'1	113'1	0	113'1
Cl	100	18363	18360'0	183'6	183'6	0	183'6
Cb	100	13758	13750'0	137'5	137'6	-0'1	137'6
Fb	100	10059	10050'0	100'5	100'6	-0'1	100'6
Bz	100	13143	13140'0	131'4	131'4	0	131'4
Hvi	100	7528	7530'0	75'3	75'3	0	75'3
Hvt	100	12635	12630'0	126'3	126'4	-0'1	126'4
Hvc	100	20403	20400'0	204'0	204'0	0	204'0

Caste— Málpáhári.

NI	100	9361'8	9290'0	92'9	93'6	-0'7	93'6
NmI	100	10966'2	10980'0	109'8	109'7	+0'1	109'8*
CI	100	7584'3	7580'0	75'8	75'8	0	75'8
FzI	100	7675'5	7670'0	76'7	76'8	-0'1	76'8
VcI	100	6861'7	6840'0	68'4	68'6	-0'2	68'6†
VbI	100	5010'1	5000'0	50'0	50'1	-0'1	50'1†
VfI	100	4945'9	4940'0	49'4	49'5	-0'1	49'4‡
VzI	100	6455'5	6440'0	64'4	64'6	-0'2	64'6

\*\* CT=6748'2 (-0'1) T-3 (86-87)

†† CT=5053'1 (-0'2) T-3 (88-90)

‡‡ CT=10295'0 (-0'1) T-3 (91)

\* CT=10975'2 (0) T-3 (92)

† CT=6857'2 (-0'2) T-3 (93)

‡ CT=5009'2 (-0'1) T-3 (94)

§ CT=4939'6 (0) T-3 (95)

RISLEY'S ANTHROPOMETRIC DATA FOR BENGAL,

TABLE 4. CORRECTION IN AVERAGE VALUES—Cont.

Character	No. of Individuals	Actual Total	Risley's Mean $\times n$	Risley's Mean (as printed)	Actual Mean (calculated)	Discrepancy [5]—[6]	Corrected Mean (adopted)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Caste— Málpáhári—Contd.

Nh	100	4410	4410·0	44·1	44·1	0	44·1
Nw	100	4107	4100·0	41·0	41·1	-0·1	41·1
Bb	100	10165	10160·0	101·6	101·6	0	101·6
Nm	100	11162	11160·0	111·6	111·6	0	111·6
Cl	100	18346	18340·0	183·4	183·5	-0·1	183·5
Cb	100	13813	13910·0	139·1	138·1	+1·0	139·1 ¶
Fb	100	10054	10050·0	100·5	100·5	0	100·5
Bz	100	13098	13090·0	130·9	131·0	-0·1	131·0
Hvi	100	7432	7420·0	74·2	74·3	-0·1	74·3
Hvt	100	12659	12650·0	126·5	126·6	-0·1	126·6
Hvc	100	20313	20310·0	203·1	203·1	0	203·1

Caste— Muchi.

NI	27	2030·4	2022·3	74·9	75·2	-0·3	75·2
CI	27	2096·8	2095·2	77·6	77·6	0	77·7 ¶
FzI	27	2116·1	2100·6	77·8	78·4	-0·6	78·1**
VcI	27	1829·5	1825·2	67·6	67·8	-0·2	67·3
VfI	27	1308·5	1304·1	48·3	48·5	-0·2	48·5
VzI	27	1676·6	1676·7	62·1	62·1	0	62·0 †
Nh	27	1328	1325·7	49·1	49·2	-0·1	49·3
Nw	27	996	993·6	36·8	36·9	-0·1	36·9
Cl	27	4939	4938·3	182·9	182·9	0	182·9
Cb	27	3834	3834·0	142·0	142·0	0	142·0
Fb	27	2743	2740·5	101·5	101·6	-0·1	101·6
Bz	27	3511	3520·8	130·4	130·0	+0·4	130·0
Hvi	27	2074	2073·6	76·8	76·8	0	76·8
Hvt	27	3513	3491·1	130·1	130·1	0	130·1
Hvc	27	5665	5664·6	209·8	209·8	0	209·8

Caste— Pod.

NI	100	7640·9	7610·0	76·1	76·4	-0·3	76·4
NmI	100	11146·4	11150·0	111·5	111·5	0	111·5 (a)
OI	100	7777·1	7770·0	77·7	77·8	-0·1	77·8 (b)
FzI	100	7831·1	7830·0	78·3	78·3	0	78·3 (c)
VcI	100	6694·0	6680·0	66·8	66·9	-0·1	66·9 (d)
VbI	100	4679·3	4670·0	46·7	46·8	-0·1	46·8
VfI	100	4752·9	4750·0	47·5	47·5	0	47·5
VzI	100	6071·2	6060·0	60·6	60·7	-0·1	60·7
Nh	100	4914	4910·0	49·1	49·1	0	49·1
Nw	100	3748	3740·0	37·4	37·5	-0·1	37·5
Bb	100	9966	9960·0	99·6	99·7	-0·1	99·7
Nm	100	11118	11110·0	111·1	111·1	0	111·1
Cl	100	18325	18320·0	183·2	183·2	0	183·2
Cb	100	14248	14240·0	142·4	142·5	-0·1	142·5
Fb	100	10123	10120·0	101·2	101·2	0	101·2
Bz	100	12927	12920·0	129·2	129·3	-0·1	129·3
Hvi	100	8002	8000·0	80·0	80·0	0	80·0
Hvt	100	13010	13010·0	130·1	130·1	0	130·1
Hvc	100	21305	21300·0	213·0	213·0	0	213·0

¶ CT=13913 (0) T-3 (96)

\*\* CT=20970·3 (-0·1) T-3 (97)

† CT=2110·0 (-0·3) T-3 (98)

†† CT=1675·2 (-0·1) T-3 (99)

(a) CT=11151·9 (0) T-3 (101-104)

(b) CT=7777·6 (0·1) T-3 (100)

(c) CT=7820·5 (0) T-3 (105)

(d) CT=6693·0 (0) T-3 (106)

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TABLE 4. CORRECTIONS IN AVERAGE VALUES—*Concl'd.*

Character	No. of Individuals	Actual Total	Risley's Mean $\times n$	Risley's Mean (as printed)	Actual Mean (calculated)	Discrepancy [5] - [6]	Corrected Mean (adopted)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Caste— Rajbansi.							
NI	100	7688.1	7660.0	76.6	76.9	-0.3	76.9
NmI	100	11075.4	11080.0	110.8	110.8	0	110.7 (e)
CI	100	7535.7	7520.0	75.2	75.4	-0.2	75.3 (f)
FzI	100	7736.0	7730.0	77.3	77.4	-0.1	77.3 (g)
VcI	100	6655.7	6650.0	66.5	66.6	-0.1	66.7 (h)
VbI	100	4943.4	4910.0	49.1	49.4	-0.3	49.3 (i)
VfI	100	4845.0	4840.0	48.4	48.5	-0.1	48.4 (j)
VzI	100	6266.0	6260.0	62.6	62.7	-0.1	62.6 (k)
Nh	100	4886	4890.0	48.9	48.9	0	48.9
Nw	100	3757	3750.0	37.5	37.6	-0.1	37.6
Bb	100	10458	10370.0	103.7	104.6	-0.9	104.6
Nm	100	11503	11500.0	115.0	115.0	0	115.0
Cl	100	18628	18620.0	186.2	186.3	-0.1	186.3
Cb	100	14026	14020.0	140.2	140.3	-0.1	140.3
Fb	100	10214	10210.0	102.1	102.1	0	102.1 (l)
Bz	100	13206	13200.0	132.0	132.1	-0.1	132.1
Hvi	100	7442	7440.0	74.4	74.4	0	74.4
Hvt	100	13121	13070.0	130.7	131.2	-0.5	131.2
Hvc	100	21065	21080.0	210.8	210.6	+0.2	210.7 (m)
Caste— Sadgop.							
NI	48	3559.9	3547.2	73.9	74.2	-0.3	74.2
CI	48	3742.0	3724.8	77.6	78.0	-0.4	78.0 (n)
FzI	48	3787.2	3792.0	79.0	78.9	+0.1	78.9
VcI	48	3214.9	3201.6	66.7	67.0	-0.3	67.0
VH	48	2339.8	2275.2	47.4	48.7	-1.3	47.5*
VzI	48	2896.6	2880.0	60.0	60.3	-0.3	60.2†
Nh	48	2386	2380.8	49.6	49.7	-0.1	49.7
Nw	48	1765	1761.6	36.7	36.8	-0.1	36.8
Cl	48	8766	8764.8	182.6	182.6	0	182.6
Cb	48	6880	6820.8	142.1	143.3	-1.2	142.3‡
Fb	48	4846	4843.2	100.9	101.0	-0.1	101.0
Bz	48	6140	6129.6	127.7	127.9	-0.2	127.9
Hvi	48	3903	3868.8	80.6	81.3	-0.7	81.3
Hvt	48	6370	6369.6	132.7	132.7	0	131.0§
Hvc	48	10216	10214.4	212.8	212.8	0	212.8

(e) CT=11072.8 (+0.1) T-3 (107-109)

(f) CT=7531.7 (-0.1) T-3 (110-114)

(g) CT=7732.2 (0) T-3 (115, 116)

(h) CT=6665.9 (-0.2) T-3 (117-119)

(i) CT=4929.9 (-0.2) T-3 (120-122)

(j) CT=4837.5 (0) T-3 (123, 124)

(k) CT=6257.3 (0) T-3 (125-128)

(l) No correction Figs. interchanged. T-3 (129, 130)

(m) CT=21067.0 (+0.1) T-3 (131)

(n) CT=3742.0 (-0.4) T-3 (132, 133)

\* CT=2280.6 (-0.1) T-3 (134-136)

† CT=2889.4 (-0.2) T-3 (137-140)

‡ CT=6830 (-0.2) T-3 (141)

§ CT=6159 (+1.2) T-3 (142)

TABLE 5—ANALYSIS OF DISCREPANCIES IN INDIVIDUAL INDICES

(1)	(2)	(3)	Nasal Index (4)		Naso-malar Index (5)		Cephalic Index (6)		Fronto-Zygomatic Index (7)		Vertico-Cephalic Index (8)		Vertico-Bimalar Index (9)		Vertico-Frontal Index (10)		Vertico-Byzygo-Index (11)		Index Total (12)			
			A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>
1	Bághi	99	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	1	2	3
2	Báuri	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
3	Brahman	100	-	-	-	3	-	1	1	-	5	3	-	-	1	1	-	3	-	10	7	18
4	Chandál	67	-	-	-	2	-	-	-	-	-	-	2	1	-	-	-	-	-	4	1	5
5	Goóla	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Kayastha	100	-	-	-	5	1	4	-	1	-	1	-	-	2	-	3	1	10	6	1	17
7	Koibarta	100	-	-	-	1	1	2	-	1	-	1	-	-	-	-	3	1	1	3	1	5
8	Mahomedans (Eastern Bengal)	185	-	-	-	1	1	2	1	2	2	-	3	1	1	-	6	-	17	10	-	27
9	Mál	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Malé	100	-	-	-	-	-	2	-	2	-	3	-	-	-	-	5	-	5	-	-	5
11	Málpáhári	100	-	-	-	-	-	-	-	-	1	-	1	-	-	1	-	-	2	2	-	4
12	Muchi	29	-	-	-	-	1	1	-	1	-	1	-	-	-	-	2	1	2	1	-	3
13	Pod	100	-	-	-	1	1	1	-	1	-	1	-	-	-	-	2	3	2	2	3	7
14	Rajbansi	100	-	-	-	4	1	2	-	3	-	3	-	4	2	-	4	-	14	7	1	22
15	Sadgop	48	-	-	-	1	1	-	-	-	-	-	-	3	1	2	3	1	4	4	1	9
	TOTAL	1201	-	-	-	3	17	4	13	2	17	3	12	3	8	5	1	19	2	74	45	186
		...	-	-	-	2	13	2	18	2	17	3	12	3	8	5	1	19	2	74	45	186

TABLE 6--ANALYSIS OF DISCREPANCIES IN INDIVIDUAL MEASUREMENTS

(1)	(2)	(3)	(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)		(12)		(13)			
		N	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	B	A <sub>1</sub>	A <sub>2</sub>	B	D	Total	
1	Bágdí	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 2	3
2	Báuri	20	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	-	-	2
3	Brahman	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	19
4	Chandál	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4 1	5
5	Goálá	41	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1
6	Kayastha	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	19
7	Koibarta	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 1 1	5
8	Mahomedans of E. B.	185	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	4	1	-	-	32
9	Mál	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
10	Malé	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5 1	6
11	Málpáhári	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	5
12	Muchi	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 1	3
13	Pod	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 3 2	7
14	Rajbansi	100	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	16 7 1	24
15	Sadgop	48	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	1	5 4 1 1	81
	Total	1201	1	-	-	-	-	-	-	4	-	-	-	3 1	-	-	-	-	1 1	12 2 1 1	16	86 47 8 1	142	

# RISLEY'S ANTHROPOMETRIC DATA FOR BENGAL,

## CORRECTIONS IN AVERAGE VALUES.

Discrepancies and corrections in Average Values are given in Table 4. Column (1) gives the character, column (2) gives (*n*), the number of individual measurements available, and column (3) the actual total obtained by direct addition of individual figures as printed in Risley's volumes. (The totals were checked twice on a Dalton adding machine). Column (4) is an approximate reconstructed total obtained by multiplying the average value given by Risley (column (5)) by the actual value of (*n*) given in column (2). Column (6) gives the average value as calculated from the actual total given in column (3), while column (5) gives the average value as printed in Risley's volume at the bottom of his Tables I & II. The difference between these two averages is given in column (7)

The total is revised by incorporating the corrections adopted in individual figures which belong to either class (A) or class (B), and the revised average is then directly calculated. These revised averages as finally adopted are shown in column (8). References to individual corrections (which are fully described in Table 3) are given in footnotes.

### Analysis of Discrepancies.

Table 5 and Table 6 give the actual number of discrepancies for each character (both measurements and indices) and for each caste classified under the groups (A-1), (A-2), (B), and (D) defined above (p. 84). It will be noticed that there are only 16 mistakes in measurements, of which 14 (in class A) can be corrected without ambiguity, 1 (in class B) is doubtful, and only 1 (in class D) has to be definitely rejected. The total number of mistakes in Indices is 126, of which 119 can be corrected without difficulty (class A), and only 7 corrections are doubtful (class B).

Table 7 gives a summary analysis of the discrepancies for different characters. For individual measurements, the frequency of mistakes is so low as 1.31 per thousand. For

TABLE 7. DISCREPANCIES FOR DIFFERENT CHARACTERS

Character	Total	A <sub>1</sub>	A <sub>2</sub>	B	D	Total	Per 1000
Nasal Index ... ..	1199	...	...	...	...	...	...
Naso-malar Index ... ..	703	2	13	2	...	17	24.25
Cephalic Index ... ..	1199	3	17	4	...	24	20.01
Fronto-zygomatic Index ... ..	1199	13	2	...	...	15	12.50
Vertico cephalic Index ... ..	1199	17	3	...	...	20	16.68
Vertico-bimalar Index ... ..	703	12	3	...	...	15	21.40
Vertico-frontal Index ... ..	1199	8	5	1	...	14	11.67
Vertico-bizygomatic Index ... ..	1199	19	2	...	...	21	17.54
<b>Indices Total ... ..</b>	<b>8600</b>	<b>74</b>	<b>45</b>	<b>7</b>	<b>...</b>	<b>126</b>	<b>13.47</b>
Nasal height ... ..	1199	...	...	...	...	...	...
Nasal width ... ..	1199	1	...	...	...	1	0.83
Bimalar breadth ... ..	703	...	1	...	...	1	1.43
Naso-malar breadth ... ..	703	...	...	...	...	...	...
Cephalic length ... ..	1199	1	...	...	...	1	0.83
Cephalic breadth ... ..	1199	4	...	...	...	4	3.34
Frontal breadth ... ..	1199	3	1	...	...	4	3.34
Maximum Bizygomatic breadth ... ..	1199	1	...	...	...	1	0.83
Height, vertex to inter-supercilliary point ... ..	1199	...	...	...	...	...	...
Height, vertex to tragus ... ..	1199	1	...	...	1	2	1.67
Height, vertex to chin ... ..	1199	1	...	1	...	2	1.67
<b>Measurements Total ... ..</b>	<b>12197</b>	<b>12</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>16</b>	<b>1.31</b>
<b>Combined Total ... ..</b>	<b>20797</b>	<b>86</b>	<b>47</b>	<b>8</b>	<b>1</b>	<b>142</b>	<b>6.83</b>

individual indices, it is almost ten times greater, being 13.47 per 1000 (or 1.34 per cent.). The combined proportion is 6.83 per thousand, or only slightly greater than half of one per cent.

The actual situation is, however, much better, for most of the discrepancies can be reconciled with practical certainty. In fact for individual measurements, only 2 measurements out of a total of 12,197 are left doubtful; and for individual indices, only 7 out of 8600. The present scrutiny shows, therefore, that Risley's data possess a probable accuracy of the order of one part in two thousand so far as individual figures are concerned.

Table 8 shows the relative frequency of mistakes for each caste. Sadgop, Brahman, Kayastha, and Rajbansi are the four castes most affected by mistakes, the frequency for these castes being a little over one per cent. On the other hand, Mál, Goálá, Bágdi, and Pod are practically free from discrepancies.

TABLE 8.—DISCREPANCIES FOR DIFFERENT CASTES

Caste	INDIVIDUAL INDICES			INDIVIDUAL MEASUREMENTS			INDICES & MEASUREMENTS COMBINED		
	Total	Mistakes	Per 1000	Total	Mistakes	Per 1000	Total	Mistakes	Per 1000
1 Bágdi ...	686	3	4.37	983	0	—	1669	3	1.80
2 Báuri ...	158	1	6.37	218	1	4.59	376	2	5.32
3 Brahman ...	600	18	30.00	900	1	1.11	1500	19	12.67
4 Chandál ...	508	5	9.85	709	0	...	1217	5	4.20
5 Goálá ...	246	0	...	369	1	2.71	615	1	1.63
6 Kayastha ...	600	17	28.33	900	2	2.22	1500	19	12.67
7 Koibarta ...	600	5	8.33	900	0	...	1500	5	3.33
8 Mahomedans	1480	27	8.261	2035	5	2.46	3515	32	9.11
9 Mál ...	72	0	...	108	0	...	180	0	...
10 Malé ...	800	5	6.25	1100	1	0.91	1900	6	3.16
11 Málpáhári ...	800	4	5.00	1100	1	0.91	1900	5	2.63
12 Muchi ...	162	3	18.54	243	0	...	405	3	7.41
13 Pod ...	800	7	8.75	1100	0	..	1900	7	3.68
14 Rajbansi	800	22	27.50	1100	2	1.82	1900	24	12.63
15 Sadgop ...	288	9	31.26	432	2	4.63	720	11	15.28
TOTAL ...	8600	126	13.47	12197	16	1.31	20797	142	6.83

Tables 9 and 10 show the frequency distribution according to the magnitude of the discrepancies in average values both before and after applying corrections. The great preponderance of discrepancies of -0.1 and -0.2 (due to Risley's faulty arithmetical procedure discussed on page 79) is brought out very clearly. Neglecting discrepancies of magnitude equal to or less than 0.2, the residual frequency of discrepancies greater than 0.2 is 8.6% for averages of measurements, and 26.4% for averages of indices. After correction these are reduced to 6.0% and 19.8% respectively.

The discrepancies in individual figures show a total frequency of 6.83 per thousand (Table 8) while discrepancies in average values have a frequency of 67.3 per cent., that is, 673 per thousand (Table 9). In other words, discrepancies in average values occur nearly 100 times more frequently than discrepancies in individual values. If we neglect discrepancies of magnitude of 0.1 and 0.2 (which were caused by Risley's faulty arithmetic), then the frequency of discrepancies in average values is 15.95 per cent. or about 160 per thousand, and is thus about 23 times as frequent as discrepancies in individual figures.

RISLEY'S ANTHROPOMETRIC DATA FOR BENGAL

TABLE 9. FREQUENCY DISTRIBUTION OF DISCREPANCIES IN AVERAGE VALUES

Magnitude of Discrepancies	BEFORE CORRECTION			AFTER CORRECTION		
	Measurements	Indices	Total	Measurements	Indices	Total
-2.4	1		1			
1.3	0	1	1			
1.2	1	0	1			
1.1	1	0	1	1		1
0.9	2	0	2	1		1
0.7	1	1	2	1	1	2
0.6	0	1	1	0	0	0
0.5	2	0	2	1	0	1
0.4	0	7	7	0	6	6
0.3	0	13	13	1	10	11
0.2	7	14	21	6	21	27
-0.1	59	43	102	62	43	105
0	68	16	84	69	17	86
+0.1	2	3	5	5	3	8
0.2	2	2	4	0	1	1
0.3	0	2	2	0	1	1
0.4	1	2	3	1	1	2
0.5	1	0	1	1	1	2
0.8	0	1	1	0	1	1
0.9	1		1	1		1
1.0	2		2	0		0
+1.7				1		1
TOTAL ...	151	106	257	151	106	257

TABLE 10. PERCENTAGE OF DISCREPANCIES IN AVERAGE VALUES BEFORE AND AFTER CORRECTION.

BEFORE CORRECTION	Measurements (151)		Indices (106)		Combined (257)	
	Total	P. C. (%)	Total	P. C. (%)	Total	P. C. (%)
No discrepancy ...	68	45.0	16	15.1	84	32.7
Not greater than 0.1 ...	129	85.4	62	58.5	191	74.3
Not greater than 0.2 ...	138	91.4	78	73.6	216	84.1
Greater than 0.2 ...	13	8.6	28	26.4	41	15.9

AFTER CORRECTION	Measurements (151)		Indices (106)		Combined (257)	
	Total	P. C. (%)	Total	P. C. (%)	Total	P. C. (%)
No discrepancy ...	69	45.7	17	16.0	86	33.5
Not greater than 0.1 ...	136	90.0	63	59.4	199	77.4
Not greater than 0.2 ...	142	94.0	85	80.2	227	88.3
Greater than 0.2 ...	9	6.0	21	19.8	30	11.7

## CONCLUSION.

The present scrutiny of Risley's data relating to Bengal Castes brings out, I think, the following facts.

(1) The arithmetical calculation was very likely stopped at the figure quoted, and was not carried through for one place further in order to obtain the correct value of the last figure. The Index-tables used for the calculation of the indices were also probably affected by the same mistake. This has caused a very large number of discrepancies of magnitude 0.1 and 0.2 (especially of  $-0.1$ ).

(2) Apart from the discrepancies caused by the faulty arithmetic procedure discussed above, the total number of discrepancies in individual figures was very small. There were only 16 discrepancies in a total of 12,197 individual measurements, and 126 discrepancies in a total of 8,600 indices, or 142 discrepancies in a combined total of 20,797 figures. The corresponding percentages are for measurements 0.131% (1.31 per thousand), for indices 1.347% (13.47 per thousand) with a combined total of 0.683% (6.83 per thousand) or just over one-half of one per cent.

(3) Discrepancies in individual indices (13.47 per thousand) are ten times as frequent as discrepancies in individual measurements (1.31 per thousand). This indicates that mistakes had occurred in the subsequent treatment rather than in the original data.

(4) Most of the individual discrepancies could be traced to obvious printing mistakes, mistakes in entering index-tables, the use of wrong figures taken from adjoining rows or columns, or obvious arithmetical slips in carrying ten etc. Out of 142 discrepancies not less than 133 could be corrected and confirmed by cross-checks with practical certainty. In 8 other cases the corrections were plausible although they could not be directly confirmed, while only one single measurement was really doubtful and had to be rejected.

Even if we reject the 8 plausible corrections, the order of residual discrepancy is only 9 in 20,797 or of the order of 1 in 2,300. Risley's primary data after revision may, therefore, be taken as singularly free from mistakes.

(5) In the case of average values there were a large number of discrepancies of magnitude 0.1 and 0.2 which can be ascribed to the faulty arithmetical procedure mentioned under (1) above.

(6) The frequency of discrepancies of magnitude greater than 0.2 was 8.6% for the averages of measurements and 26.4% for the averages of indices. Discrepancies are thus more frequent (3 times) in the case of indices, but not to the same extent as in the case of individual figures (10 times).

After applying the individual corrections, the discrepancies are reduced to 6.0% for averages of measurements and 19.8% for averages of indices.

(7) Discrepancies in averages (for both measurements and indices) have a frequency of 673 per thousand against a frequency of 6.83 per thousand for discrepancies in individual figures.

(8) Even if we neglect the discrepancies of magnitude equal to or less than 0.2 (which can be traced to faulty arithmetical procedure) we find that discrepancies in average values occur about 23 times as frequently as discrepancies in individual values.

We must conclude, therefore, that the real defect in Risley's data crept in during the calculation of the average values, and that his primary data of individual measurements can be used with safety, especially after applying the corrections discussed in the present paper.

The revised averages based on corrected individual figures for all castes and all characters are collected together in the final Table 11.

TABLE II—CORRECTED AVERAGE VALUES

	Bághi	Báuri	Brahman	Chandál	Goálá	Kayastha	Koibarta	Maho-medans	Mál	Malé	Mál-Páhári	Muchi	Pod	Rajbansi	Sadgop
NI	80.8	84.3	70.8	74.2	76.6	70.7	76.6	77.5	85.1	94.7	99.6	75.2	76.4	76.9	74.2
NmI	112.4	111.8	...	114.1	...	...	...	118.6	...	109.7	109.8	...	111.5	110.7	...
CI	76.4	75.1	78.8	78.2	77.3	78.3	77.5	78.0	77.3	74.9	75.8	77.7	77.8	75.3	78.0
FzI	79.1	78.2	81.6	78.0	78.6	79.4	79.3	78.4	79.0	76.5	76.8	78.1	78.3	77.3	78.9
VcI	68.2	67.9	66.3	69.1	67.0	68.2	67.5	69.0	68.8	67.5	68.6	67.8	66.9	66.7	67.0
VbI	51.3	54.2	...	53.9	...	...	...	54.7	...	50.5	50.1	...	46.8	49.3	...
VfI	49.6	50.1	48.2	49.2	48.1	48.5	48.8	49.8	49.9	49.3	49.4	48.5	47.5	48.4	47.5
VzI	62.7	64.1	59.4	63.1	61.2	61.1	61.5	63.5	63.2	64.5	64.6	62.0	60.7	62.6	60.2
Nh	46.8	46.1	49.7	49.7	49.1	50.2	48.1	49.4	47.2	43.9	44.1	49.2	49.1	48.9	49.7
Nw	37.6	38.8	35.1	36.8	36.5	35.4	36.7	38.2	40.0	41.6	41.1	36.9	37.5	37.6	36.8
Bm	106.0	110.7	...	112.3	...	...	...	113.3	...	102.9	101.6	...	99.7	104.6	...
Nm	119.2	123.9	...	128.2	...	...	...	128.6	...	113.1	111.6	...	111.1	115.0	...
CI	132.8	135.1	131.8	133.3	133.9	132.5	132.3	133.1	133.1	133.6	133.5	132.9	133.2	136.3	132.6
Cb	139.6	138.9	143.3	143.2	142.2	142.9	141.1	142.7	141.3	137.6	139.1	142.0	142.5	140.3	142.3
Fb	101.4	102.6	104.5	102.0	102.2	101.7	102.0	103.1	102.6	100.6	100.5	101.6	101.2	102.1	101.0
Bz	128.2	131.2	128.2	130.7	130.0	128.1	128.6	131.4	129.8	131.4	131.0	130.0	129.3	132.1	127.9
Hvi	75.5	73.0	87.3	72.9	80.3	76.5	78.6	71.3	74.5	75.3	74.3	76.8	80.0	74.4	81.3
Hvt	129.1	128.4	133.5	129.9	131.4	130.8	130.2	128.2	127.9	126.4	126.6	130.1	130.1	131.2	131.0
Hvc	204.7	204.8	216.5	207.5	212.4	209.9	209.2	207.1	205.6	204.0	203.1	209.8	213.0	210.7	212.8

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