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# **BULLETIN No. 81**

ANTHROPOLOGICAL SERIES, NO. 18

# Anthropometry of the Beaver, Sekani, and Carrier Indians

BY J. C. Boileau Grant

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OTTAWA J. O. PATENAUDE, I.S.O. PRINTER TO THE KING'S MOST EXCELLENT MAJESTY 1936

Price, 25 cents

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# ANTHROPOMETRY OF THE BEAVER, SEKANI, AND CARRIER INDIANS

# INTRODUCTION

This is the third report on the physical anthropometry of the Indians of Canada the author has made for the Division of Anthropology, National Museum of Canada. The first report (Bulletin No. 59) dealt with the Cree and Saulteaux Indians in northeastern Manitoba; the second (Bulletin No. 64) with the Chipewyan and Cree Indians in the region of lake Athabaska; and this, the third, the work for which was undertaken during the summer of 1929, deals especially with the Beaver Indians. But, incorporated in this third report is the information that D. Jenness, Division of Anthropology, National Museum of Canada, collected in the year 1923 on the Sekani, Eastern Carrier, and Western Carrier Indians. His notes on these three tribes he has very kindly entrusted to the author's care. It is not inappropriate that these three tribes, together with the Beaver Indians, should be dealt with in one report, for not only do they inhabit adjacent territories but all four belong to the Déné or northern Athabaskan stock.

The main purpose of the field work undertaken in 1929 was to obtain information on the physical characters and physical proportions of the Beaver Indians with the object of extending our knowledge of the Déné stock. To this stock, the Chipewyan Indians dealt with in the second report also belong. The Beaver Indians frequent the banks of Peace river.

Since within recent years it has become known that beyond the high banks of Peace river there extends a wide and fertile prairie, the region about this great river has gradually been turned into a vast field of wheat. The railway track is penetrating this region and stations are being established every few miles. Around these stations villages are springing up, and from these as centres farming is enabled to spread to progressively wider circles. The Indians, in consequence of this invasion, are disposing of their reserve lands—which the homesteads of white people thus threaten to surround—and are taking up fresh reserves farther afield.

The three bands of Beaver Indians visited have, or had until recently, reserves near Hudson Hope, Fort St. John, and Dunvegan, all of which are situated close to the banks of Peace river. The two other bands of Indians visited were living somewhat to the south of the river. Of these, one, the Grande Prairie band, is composed of Beaver Indians and of various mixed breed Indians (this band had assembled at lake Saskatoon); the other, composed largely of Cree Indians and Cree breeds, has its reserve at Sturgeon lake, where it was visited.

In all, measurements were taken of one hundred and eighty-five Indians.<sup>1</sup> When these are sorted out according to age, sex, and stock they are seen, as the accompanying Table No. I shows, to fall into a considerable variety of groups, of which only the Beavers are represented

<sup>&</sup>lt;sup>1</sup>In addition to these one hundred and eighty-five Indians, four Indians were examined for blood grouping only.

in numbers at all adequate for the purposes of the present report. On this account it is proposed to consider, in the meantime, only the pure Beaver Indians and to reserve the data on the other groups until larger numbers have been measured. Of the men classified as "pure" Beaver Indians it is probable that four are approximately one-eighth white.

### TABLE I

Distribution According to Sex, Age, and Stock, of the Individuals Examined in 1929

Stock	Men		Women		Children under 20 years		Total	
Stock	Aged 20 to 59	Aged 60+	Aged 20 to 59	Aged 60+	Boys	Girls	Total	
Beaver, pure	29	6	11	2	4	2	54	
Beaver-white		1	3		1	•••••	6 1	
$\frac{1}{2}$ $\frac{1}{2}$ Cree, pure		6	7	2	•••••		18	
Cree-white $\ldots$	2	•••••		• • • • • • • • • •	••••		2	
Cree-white	11	•••••	5	1		1	18	
Cree-white	7	1	10	1	2	3	24	
Crèe-white		•••••	2		1	1	1	
t T		2	4				14	
Cree-Beaver		• • • • • • • • • • • • •	2	•••••		3	5	
Miscellaneous	20		11	•••••		4	35	
Total	84	16	56	6	8	15	185	

The number of pure Beaver Indians measured in any particular band is too small, and the bands themselves are too heterogeneous, to allow them to be considered by bands: nor would there be much purpose in so considering them, as the Beavers have intermarried among themselves from one end of Peace river to the other. On this account, if for no other, they are better considered as a tribe. The Beaver Indians are regarded by the traders, missionaries, and other white people whom the author met as a relatively pure, unmixed tribe of Indians; the infusion of white blood among them is regarded as weak indeed. Adjacent tribes are said to despise the Beavers and to avoid intermarriage with them. It is, moreover, a tactical mistake to ask an Indian directly if he is a Beaver, for if he is not, he will resent the question as an imputation of inferiority. Nor have the Beavers an enlarged opinion of themselves. It was, for example, pointed out that at the dance arranged at "Treaty-time" Crees, Saulteaux, and breeds took part while the Beavers stood outside the circle and looked on. Within the last thirty or forty years the Beaver Indians have greatly diminished in numbers. In addition to tuberculosis, which is ever present, epidemics of influenza and of measles have carried them off in large numbers. As a result, members of the dwindling bands are becoming more and more closely inbred. Two old men, for example, have for their present wives their own granddaughters. There are cases of brothers marrying their own sisters. Polygamy is still practised, or it should be said that if an Indian is a sufficiently good hunter to support two or more wives, he often does so. One Beaver has been married to three sisters. Nowadays there is seldom a marriage ceremony; in many cases there is not even a "tea dance". Cross cousin marriage is said not to obtain. A number of Beavers at Hudson Hope could understand a very little English and some could speak it slightly. Many of those at Fort St. John and Dunvegan could speak or understand some Cree or English.

From what was learned locally it would appear then, that the Beaver Indians have rapidly dwindled in numbers within recent years, that they are relatively pure, and that they are much inbred.

### Methods

Identically the same instruments were used by the author this year as in the preceding two years, and identically the same methods were employed. All figures and all calculations have been checked. The same means of collecting and examining specimens of blood for grouping purposes were adopted this year as last. The details of these are specified in the previous reports. The methods followed by Jenness, in his examination of the Sekani and Carrier Indians, were such as are suggested by Sullivan's "Essentials of Anthropometry".<sup>1</sup> The instruments used by Jenness and by the author were standard field sets made by Hermann of Zurich.

# Ages

The ages recorded are those given by the individuals themselves. In the case of the older persons they are unlikely to be more than approximately accurate; but the younger persons seemed to be able to arrive at their ages quite readily.

## Stock

Each individual was asked by the interpreter as to the origin of his two parents; and it is almost entirely on this evidence that the grouping as shown in Tables I and IX is based.

### Abbreviations in the Text

The numbers in brackets are the serial numbers of the individuals referred to. Full details concerning them are to be found in the appropriate appendices.

P.E. diff. = the probable error of the difference.

Diff. = the numerical difference between two measurements.

# Abbreviations in the Frequency Distribution Tables

- $\sigma$  = standard deviation
- $E_m = probable error of the mean$
- V = coefficient of variation
- N = number of cases examined

<sup>1</sup>Am. Mus. of Nat. Hist., New York, 1923.

A	bbrevi	atio	ons in the Appendice	8
Bridge of the nose	S	=	Straight	
Durde of the news			Convex	
	XV	=	Concavo-convex	
	V	=	Concave	
Hair of the head			Very coarse	
	-		Coarse	
	-		Medium	
			Fine	
Hair on the face	+-		Absent	
			Very scanty	
			Appreciable	
	-		marked amount	
Colour of iris			Black	
			Dark Dark to medium	Brown
			Medium	DIGMI
			Light	
			Grey	
Palpebral fissure			On the same level	
Relation of latera			Slightly )	
canthus to			Moderately   Hig	her
medial canthus			Markedly	
Epicanthic fold			Absent	
L'proditoine rois	1	=	Slight	
	<b>2</b>	=	Medium	
	3	=	Medium Marked	
Colour of sclera	$\mathbf{C}$	=	Clear	
	Y	=	Yellowish	
	D	=	Dull	
Lip thickness			Thin	
			Medium	
			Thick	
Ear lobule			Free	
	A		Attached	
Teeth			Carious tooth	
Blank	space		Sound tooth Regular or in aline	ement
Incisors irregular			Slightly	5110110
	1		Moderately Ou	t of alinement
	4	_	= Moderately } Our = Extremely	
	0		L'Automory )	

Blood groups	0	A 2	В 3	AB 4	Jansky
	4	2	3	1	Moss

The colour of the skin of the face of the Pure Beaver Indians was darker than that of the Chipewyan Indians.

The hair of the head was straight and black. In none of the twentyeight men or eleven women of whom observations are recorded was it in the least wavy. In three, however (males, Nos. 20, 39, and 61), it had a brown tinge. The distribution of the quality of the hair of the head is shown in the accompanying table.

TABLE	II
-------	----

Distribution, in Percentages, of the Quality of the Hair of the Head

Tribe	Numbers examined		Coarse	Medium	Fine
Beaver Indians (pure) Men and old men Women and old women	35 13	% 6	% 57 7 • 5		% 14 31
Chipewyan Indians (Fond-du-Lac band) Men. Women.	30 21		$53 \\ 9 \cdot 5$	47 62	28.5

It will be observed from this table that the distribution for the male and female Beaver Indians is similar to that for the male and female Chipewyan Indians.

No one showed any signs of baldness. The women, as is usual, have finer hair than the men. Only two men (No. 61, and No. 2 old) had any hair on the cheek. Six men (Nos. 1, 28, 51, 53, 61, and No. 2 old) had more than a scanty amount of hair on upper lip and chin. The amount in no case even approached the marked quantity that is the white standard. It is, however, to be noted that twelve men are recorded as making at least occasional use of the razor, perhaps in a desire to cultivate a beard. This detracts from the full value of the records as some who appeared hairless may not have been so naturally. Rarely had anyone a single grey hair on the head before the age of fifty. Only one (No. 26) of the men over sixty years of age had no grey hairs at all. The distribution of the shape of the bridge of the nose is shown in

the accompanying table.

Distribution, in Percentages, of the Shape of the Nose							
Tribe	Numbers examined	Straight	Convex	Concavo- convex	Concave	Straight concave	
Beaver Indians (pure) Men and old men Women and old women	35 13	% 20 23	% 26 15	% 40 8	% 14 54	%	
Chipewyan Indians (Fond-du- Lac) Men		23	57	7	7	7	

14

21

33.5

33.5

19

. . . . . . . . . .

TABLE III Distribution in Percentages of the Shame of the Nace

Women.....

The Beaver women, like the Chipewyan women, appear to have a larger percentage of concave bridges than the men.

The lateral palpebral canthus (slant of the eye) was with rare exceptions higher than the medial: generally it was only slightly higher, occasionally moderately higher, and rarely markedly higher, as the following table shows:

	Numbers	Same	Higher		
	examined		Slightly	Moder- ately	Marked- ly
Beaver Indians (pure) Men and old men. Women and old women	34 13	% 6	% 79 85	% 9 15	% 6

TABLE IV

Relation, in Percentages, of Lateral to Medial Palpebral Canthus

The sclera was clear in eight, muddy in six, and yellowish in twenty of the thirty-four men examined. It was clear in four, muddy in one, and yellowish in five of the ten women examined.

Of the thirty-two men under observation, two had slight epicanthic or Mongolian folds; one had a moderate fold. Of the thirteen women, three had slight folds. Some degree of fold, therefore, was present in six  $(13 \cdot 3)$ per cent) out of forty-five persons.

The actual distribution of the colour of the eye (iris) is described in the accompanying Table V. From this it is apparent that the women, as is usual, had a greater percentage of dark eyes than the men, and that the distribution for Beavers and Chipewyans is very similar.

			Brown				
Tribe	Numbers	Black	Dark	Dark to medium	Medium	Light	Grey to blue
Beaver Indians (pure) Men and old men Women and old women	35 13	% 3	% 77 100	% 14	% 6	%	%
Chipewyan Indians (Fond-du-Lac band) Men	33	6	79	12	3		
Women	21	14	86	l			* * * * * * * * * *

TABLE V

Distribution, in Percentages, of the Colour of the Eye (Iris)

Arcus senilis was pronounced in four of the six old men (Nos. 4, 9, 26, and 67), and in one man aged 40 (No. 52).

Pterygium occurred twice: in one man (No. 43) and one old man (No. 2).

Of the thirty-five men, twenty-one had thin to medium lips; fourteen had medium to thick lips. Of the thirteen women, the lips of eleven were thin to medium, and of two medium in thickness.

The teeth of thirty-five male and eleven female adult and old Beavers were examined. Following the practice of last year the regularity of the dental arcade was examined. In nine individuals only were the teeth in perfect alinement: in twenty the incisors were slightly out of alinement; in eight markedly out; and in six they were in extreme disarrangement. The front teeth, then, of thirty-four (79 per cent) of these forty-three individuals were to a greater or less extent in mis-alinement. This proportion is comparable with that for Chipewyan Indians, of whom approximately 70 per cent had irregular incisor teeth.

The teeth were systematically examined for caries. If any teeth were found to be decayed or missing their appropriate spaces were scored across on prepared blank forms. Though incipient trouble may easily have escaped notice, it is not probable that any cavity of appreciable size or that any missing tooth went unnoticed. It was not at all unusual to find among Beaver Indians, as it was among Indians examined elsewhere, a number of the middle aged and old whose third molar teeth had never erupted. These individuals state they have never had a tooth extracted or drop out. Rudimentary third molars have also been observed. From Appendix III on page 32 the details of the distribution of the decayed teeth may be seen. From this appendix it has been calculated that 72 per cent of the twenty-nine Beaver men (ages 20 to 59 years) had sound teeth. The eight who made up the remaining 28 per cent had among them eighteen carious teeth. Only two of the six old men had sound teeth. The other four had among them twenty-one carious teeth. Seven of the eleven women had sound teeth; the remaining four had among them thirteen carious teeth. One of the two old women had ten carious teeth.

The frequency with which the various teeth of the eight male and four female adult Beavers (ages 20 to 59 years) who suffered from caries were affected is shown on a percentage basis in the following table. The actual number of teeth affected was thirty-one. The calculations are made to full figures.

TABLE VI

	Right side	Left side
Upper Lower	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$

The thirty-one carious teeth found among the twelve adults of under sixty years were, with only one exception, molars; the exception being a lateral upper incisor. Lower teeth were affected more commonly than upper in the ratio of 81:19. This high ratio is no doubt accounted for by the smallness of the data, since in northeastern Manitoba where three hundred and nine carious teeth were detected the ratio was 70:30, and around lake Athabaska where one hundred and twenty-six carious teeth were detected the ratio was 63:37.

Among the thirty-five male and thirteen female Beavers the ring finger was, in all instances but one, longer or more projecting than the index; the exception being a man (No. 3) both of whose index fingers were equal in length to his ring fingers. He, therefore, was the one individual out of forty-eight who did not possess the primitive digital formula  $3 > 4 > 2 > 5 > 1.^{1}$ 

<sup>&</sup>lt;sup>1</sup>These observations were made by simple inspection; not by the precise instrumental methods recently employed by George, who finds that in white people the ring finger is longer in 48 per cent, the index finger is longer in 33 per cent, and both of equal length in 19 per cent. George, R.: "Human Finger Types"; Anat. Rec., vol. 46, No. 2 (1930).

### BLOOD GROUPS

In all, the blood of forty pure Beavers was examined. The technique was identically the same as that employed last year. The following table records the sources from which the samples of blood were obtained and the groups into which they fall.

	Numbers examined	1 0	2 A	3 B	4 (Jansky) AB
Beaver Indians (pure) Men. Old men. Women. Old women. Boys.	24 6 4 1 5	12 3 3 1 2	12 3 1 3		
Total	40	21	19	•••••	

TABLE VII Blood Groups

# From this it may be seen that the blood of practically half the Beaver Indians examined belongs to Group O; the other half to Group A. This, however, is not to be regarded as the distribution of the blood groups of Northern Athapascan Indians in general, since it is quite at variance with our findings in 1928 among the Chipewyan Indians at lake Athabaska where the grouping was 80 per cent, 10 per cent, 10 per cent, and 0 per cent, and also with the findings of Ruggles Gates made in the same year on Mackenzie river among the Slave, Dogrib, Hare, and Loucheux Indians, who showed a grouping of 85 per cent, 15 per cent, 0 per cent, and 0 per cent. Inbreeding among the Beaver Indians, no doubt, explains the unusual distribution. The blood, however, of sixty-one various other Indians and mixed breeds in Peace River area was also examined, and found to possess a somewhat similar distribution, thirty-eight (or 62 per cent) falling into Group O, and twenty-three (or 38 per cent) into Group A. In Peace River region there is, therefore, an unusually high percentage of Group A blood. For the sake of convenience, the findings of this year and last year, together with data presented by Gates and Snyder, are set out in the following table:

Blood Groups	in Percenta	ges		
Tribe of Indians	Number examined	0	A	
		07	07	(

Pure Beaver Indians...

gion....

Non-Beaver Indians and breeds in Peace River re-

Pure Indians (Snyder)<sup>3</sup>.....

gion. Chipewyan Indians<sup>1</sup>. Mackenzie River Indians (Gates)<sup>2</sup>.....

B

%

10

10

47.5

38 10

15.5

7.7

52.5

62

80

84.5

 $91 \cdot 3$ 

40

61

69

71

453

AB

%

. . . . . . .

# TABLE VIII

'Grant, J. C. B.: "Anthropometry of the Chipewyan and Cree Indians"; Bull. No. 64, Anth. Ser., No. 14,

<sup>1</sup>Grand, J. O. D.: Anthropometry of the Omperyan and Gree Inducas, Data 16, 01,

# MATERIAL COLLECTED IN 1923

D. Jenness, while making an ethnological survey in British Columbia in 1923, availed himself of the opportunity of making observations of the physical features and measurements of the Sekani, Eastern Carriers, and Western Carriers, who frequented the upper reaches of Fraser river. The Sekani were measured at McLeod, on McLeod lake, where two bands of the tribe have amalgamated and built permanent homes. They have been in close contact with the Carriers, particularly the Stuart Lake Carriers, for over a century, but with four exceptions all the individuals whose measurements are included in this report gave their parentage on both sides as Sekani. In each of the four exceptions (Nos. 89, 91, 96, and 101) the mother was a Carrier woman from Stuart lake. The Eastern Carriers were measured at Prince George, Stony Creek, and Fort Fraser, the Western Carriers at Hagwilget, on Bulkley river. The data on these are to be found in the appendix. As mentioned before, these tribes belong, as do the Beaver, to the Déné or northern Athapascan stock. Only those who are said to be devoid of all white blood are considered in this report. The measurements of a number of breeds who were examined have been discarded.

In all, the features are described and measurements given of eightyfive individuals who are distributed as follows:

Tribe of Indians	Men (20 to 59 years)	Old men (60+ years)	Women (20 to 59 years)	Old women (60+years)	Total
Sekani	11	3	9	1	24
Western Carrier	5	7		2	14
Eastern Carrier	19	4	22	2	47
Total	35	14	31	5	85

TABLE IX

Distribution of Individuals Examined in 1923

# DESCRIPTIVE CHARACTERS OF THE PURE SEKANI, EASTERN CARRIER, AND WESTERN CARRIER INDIANS

Though the hair of the head was typically straight and black, in most (nineteen out of twenty-four) of the male and female Sekani and a few (four out of twenty-four) of the Eastern Carrier females, a slight degree of waviness was shown. That is to say, 27 per cent of the eighty-five persons examined had wavy hair. All the others had straight hair. The hair was black except in two or three old persons in whom it was turning grey or was becoming white. The amount of hair on the faces of the men and old men is shown in Table X.

Tribe	Numbers					Cheek				Beard			
TIDe	examined	0	1	2	3	0	1	2	3	0	1	2	3
Sekani. Western Carrier. Eastern Carrier. Total. Percentages.	14 12 23 49	12 9 23 44 90	2 3  5 10		· · · · ·	$     \begin{array}{r}       10 \\       8 \\       19 \\       37 \\       75 \cdot 5     \end{array} $	$     \begin{array}{r}       4 \\       4 \\       4 \\       12 \\       24 \cdot 5     \end{array} $		· · · · · · · · · · · · · · · · · · ·	1 2 4 7 14	9 5 12 26 53	4 5 7 16 33	

TABLE X

(0 = absent: 1 = very scanty: 2 = appreciable: 3 = marked amount.)

Among the different tribes an epicanthic fold was found to occur eight times in all. Seven times it was slightly marked, only once was the fold well marked. Some degree of fold, therefore, was present in eight out of eighty-five persons (9.4 per cent) of whom three were men; five were women.

The distribution of the colour of the eye (iris) is shown in the accompanying Table XI.

TABLE ]	$\mathbf{XI}$
---------	---------------

Distribution of the Colour of the Eye (Iris)

	MEN	AND OLD M	Ien					
Tribe	Number	Black	Dark	Brown				
	exammed	examined		Medium	Light	grey		
Sekani. Western Carrier. Eastern Carrier	11		7 4 12	7 5 8	2 3			
Total	48		23	20	5			
Percentages			48	42	10			
	Women	and Old	Women					
Salaani	10		.0	1	1			

Sekani. Western Carrier Eastern Carrier	10 1 24	 $\begin{array}{c} 9 \\ 1 \\ 15 \end{array}$	1 9	
Total				
Percentages		 71.5	28.5	

<sup>1</sup>One woman and one man had diseased eyes, on which account their colour could not be observed.

As usual, the women have a larger percentage of dark eyes than the men. There is a very appreciable proportion of light brown eyes, which is suggestive of white admixture.

The lips were of medium thickness in all except three of the eighty-five persons: one Sekani had thin lips, two Eastern Carriers had thick lips.

# ANTHROPOMETRIC CHARACTERS OF BEAVER, SEKANI, AND CARRIER INDIANS

The following is a list of the measurements taken of the Beaver Indians. Of the Sekani and Carrier Indians the seven measurements marked with an asterisk were taken, and the four indices marked with an asterisk are derived from them.

\*Stature.

Sitting height.

\*Length of head (glabella ad maximum).

\*Width of head (biparietal maximum).

Width of forehead (frontal minimum).

Length of face-

\*(a) Menton-nasion. (b) Menton-crinion. \*Width of face (bizygomatic maximum). \*Height of nose. \*Width of nose. Length of mouth. Length of ear. Width of ear. Length of upper lip. Length of hand. Width of hand.

From these the following indices have been calculated:

Sitting height. (Sitting height to stature.)

\*Cephalic. (Width of head to length of head.)

\*Cephalo-facial. (Width of face to width of head.) \*Facial. Length of face (menton-nasion) to width of face.

\*Nasal. (Width of nose to height of nose.)

Ear. (Width of ear to length of ear.)

Hand. (Width of hand to length of hand.)

The data on which this report is based and from which the various tables have been compiled are set out in the appendices, pages 28 to 37, and are, therefore, available to anyone who may wish to utilize them. The results of the methods adopted in this section of the report are presented in their most concise form in the following table, No. XII, in which, for purposes of comparison, data on the Fond-du-Lac band of Chipewyan Indians are included.

Anyone who would analyse the figures from which a particular mean has been calculated should turn in the first place to the appropriate frequency distribution table (pages 18 to 27) where he will find the mean, the standard deviation, the probable error of the mean, the coefficient of variation, and the precise number of cases examined, all duly recorded; and subsequently, if he would pursue his inquiry, let him consult Tables XIII and XIV which interpret Table XII and make the words of the text more or less superfluous, for they tell us whether the intertribal differences, which Table XII suggests exist, are genuine differences or merely apparent. Table XIII deals with the males; Table XIV with the females. As an example of the way in which to employ the probable error was given in the first and second reports it is unnecessary to repeat it here.<sup>1</sup>

<sup>1</sup> See Nat. Mus. of Canada, Bulls. 59 and 64.

# TABLE XII

### Males (20 to 59 years) Females (20 to 59 years) Sekani. Chipewyan Sekani, Chipewyan Fond-du-Eastern Beaver Fond-du-Eastern Beaver Carrier. Western Lac Carrier Lac Carrier 35 11 21 31 29 33 Maximum number of cases1.... 169.7 156.4 150.9 158.6168.3 164.7Stature..... $\pm 0.78 \\ 88.7$ $\pm 0.76$ $\pm 0.42$ $\pm 0.68$ $\pm 0.51$ 82.4 Sitting height..... 88.4 $\pm 0.52$ $\pm 0.84$ $\pm 0.30$ 52.4 $53 \cdot 9$ $54 \cdot 8$ Index of sitting height..... $\begin{array}{c}\pm 0.29\\79.6\end{array}$ $\pm 0.41$ $\pm 0.26$ . . . . 79.1 81.4 81.580.5 78.8 Cephalic index..... $\pm 0.40$ $\pm 0.23$ $\pm 0.33$ $\pm 0.25$ $\pm 0.29$ 189.4 193.8 191.2 186-6 186.6 184.5Glabella ad maximum..... $\pm 0.47$ 152.0 $\pm 0.68$ $\pm 0.53$ $\pm 0.58$ $\pm 0.57$ 147.5 148.6 150.6 155.5 Biparietal..... $152 \cdot 9$ $\pm 0.52$ $\pm 0.60$ $\pm 0.63$ $\pm 0.51$ $\pm 0.54$ 142.1 141.9 143.7 147.2149.5Bizygomatic..... $150 \cdot 0$ $\pm 0.74$ 95.5 $\pm 0.60 \\ 95.6$ $\pm 0.46$ $\pm 0.68$ $\pm 0.58$ 96-4 Cephalo-facial index..... 96.8 98.4 96.2 $\pm 0.29$ $\pm 0.24$ $\pm 0.31$ $\pm 0.33$ $\pm 0.42$ $103 \cdot 5$ 102.4103.5 $104 \cdot 6$ Frontal minimum..... . . . . . . . . . . . . . $\pm 0.41 \\ 183.0$ $\pm 0.53$ $\pm 0.70$ 173-8 180.8 186.6 Menton-crinion..... . . . . $\pm 1.13$ $\pm 0.83$ $\pm 0.96$ 126.3 117.4 117.2 120.1 Menton-nasion..... $121 \cdot 8$ $124 \cdot 1$ $\pm 0.77$ $\pm 0.73$ $\pm 0.55$ $\pm 0.78$ 82.6 84.9 82.9 82.684.5Facial index..... $\pm 0.53$ $\pm 0.39$ $\pm 0.41$ $\pm 0.54$ $\pm 0.44$ . . . . . Upper lip (length)..... 18.0 $19 \cdot 2$ ..... $\pm 0.36$ $\pm 0.54$ 54.1 $55 \cdot 2$ 50.5 $51 \cdot 5$ $51 \cdot 5$ 54.0 Nose height..... $\pm 0.39 \\ 39.4$ $\begin{array}{r}\pm 0.39\\39.0\end{array}$ $\pm 0.38 \\ 38.2$ $\pm 0.63$ $\pm 0.39$ 36.2 35.2 35.9 Nose width..... $\frac{\pm 0.33}{71.5}$ $\pm 0.41$ 70.6 $\pm 0.20$ $\pm 0.38$ $\pm 0.32$ 70.1 69.8 70.5Nasal index..... 72.9 $\pm 1.19$ $\pm 0.94$ $\pm 0.61$ $\pm 0.84$ $\pm 0.64$ 56.4 $59 \cdot 1$ 60.0 $62 \cdot 3$ Mouth (length)..... $\pm 0.31$ $\pm 0.50$ $\pm 0.41$ 65.4 $66 \cdot 1$ Ear length..... . . . . . . $\frac{\pm 0.51}{36.2}$ $\pm 0.63$ 37.3 Ear width..... $\pm 0.34$ $\pm 0.30$ Ear index..... $55 \cdot 1$ 56.9 . . . . . $\pm 0.59$ $\pm 0.57$ $177 \cdot 5$ 173.9 182.9 189.9 Hand length..... $\pm 0.81$ $\pm 0.99$ $\pm 0.86$ 78.2 84.7 88.9 80.6 Hand width ..... $\pm 0.52 \\ 47.2$ $\pm 0.48$ $\pm 0.41$ 46.4 45.0 45.7 Hand index..... $\pm 0.30$ $\pm 0.25$ $\pm 0.25$

# Summary of Means and Probable Errors of Means

<sup>1</sup>The maximum number of cases is recorded here. On some measurements fewer observations were made. The actual number of observations made on a given measurement is recorded in the Frequency Distribution Tables, page 18 et seq.

Н	
IIIX	1
TABLE	
AB	0
L	•

Adult Males (aged 20 to 59 years) of Déné Stock

D	Chilcotin <sup>1</sup>	Меап	165-1	85-1 186-6	158.8	0.06	124.3	83.9	53-2	74.2	*		* • • • • • • •			36											
	tn.	Diff./ P.E. diff.	3.51 0.3 1	4.0 19.7	-0.50 -0.50	- <del>1</del> - 4	2.2	0.5	0.5	1.8	4.5	5.0	2.2	9.3	2.3												
С	Chipewyan	Mean differ- ence	0.0 0.3	1.1	0.0 9.8 9.8	1.1	50.00	0.3	0.1	5.0	2.3		1.0	4.2	0.8												
Ū	Beaver v. (	Chipe- wyan	164-7 88-7	78.8	152.9	104.6	124-1	82.6	54.0	72.9	62-3 66.1	37.3	56.9	6.88	47.2	33											
-	B	Beaver Mean	168-3 88-4 50 4	80.5 80.5	152.0	103.5	121.8	82.9	54.1	2.0.02	65.4	36.2	55.1	84.7	46.4	29											
	ю.	Diff./ P.E. diff.	5.4	6.5	3.1	n. <del>1</del>	2.1	2.8	2.2	60 C																	
В	ii and Carrier 1 Chipewyan	Mean differ- ence	5.0	2.6 2.6	0.00	7.7	2 2	1.9	1.2	2.4			- - - - -														
I	Sekani and Carrier v. Chipewyan	Chipe- wyan Mean	164.7	78-8 193-8	152-9	Ŧ. 0£	124.1	82.6	54.0	72.9						33											
	Sel	Sel	Se	Š	Še	ž	02	02	S	S	ŭ	ŝ	Sekani and Carrier Mean	169.7	81.4	155-5	7.06	126.3	84.5	55.2	70-5			• • • • • • • • • • • • • • • • • • • •			35
	73	Diff./ P.E. diff.	1.7	2.1	4 67 -	P. T	4.9	2.4	2.0	1.0			•														
1	sekani and rier	Mean differ- ence	1.4	0.9	5 59 52 5 5 59 52 5		4.5	1.6	1.1	0.1		• • • • • • • • • • • • •															
A	Beaver v. Sekani and Carrier	Sekani and Carrier Mean	169.7	81.4	155-5	7.06	126-3	84.5	55.2	70.5						35											
	B	Beaver Mean	168.3	80.5 189.4	152.0 147.2 06.8	0.06	121.8	82-9	54.1	9.02	•	• • • • • • • • • • • • • • • •				29											
			Stature Sitting height	Cephalic index Galabella ad maximum	Biparietal. Bizygomatic.	Frontal-minimum	Menton-orinion	Facial index	Nose height.	index	Mouth	width.	Hand length		index	Nos											

<sup>1</sup> Twelfth and Final Report on the North-Western Tribes of Canada; Brit. Ass. for the Advancement of Science, 1898.

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Section A of Table XIII compares the thirty-five adult male Sekani and Carrier Indians measured by Jenness, with the twenty-nine adult male Beaver Indians measured by the author. Their mean measurements and indices are set out in the first and second columns of this section; in the third column the differences between these means are recorded: and, in the fourth column are to be found the results of calculations showing the number of times the difference between two measurements is greater than the square root of the sum of the squares of their probable errors. If we somewhat arbitrarily accept a result of  $3 \cdot 0$  or more as significant of a real difference in mean measurements, and if we accept a result of less than  $3 \cdot 0$  as evidence that the mean difference in the third column is to be disregarded, then: since in the fourth column of section A the figure 3.0 is exceeded only twice we may take it that the male Beaver Indians differ from Sekani and Carrier Indians in only two of the measurements that were taken; the measurements being the biparietal diameter of the head (Diff./P.E. diff. of  $4 \cdot 3$ ) and the menton-nasion diameter of the face (Diff. /P.E. diff. of  $4 \cdot 9$ ). In these diameters there are almost beyond question differences of at least 3.5 mm. and 4.5 mm., respectively. And, it may be that there is a difference of  $2 \cdot 3$  mm. or more in the bizygomatic diameter as indicated by the fact that its Diff. /P.E. diff. is 2.8 (i.e., odds of  $16 \cdot 0$  to  $1 \cdot 0$ ). In other words it may be said that in so far as the physical proportions of the adult male Indians on which this report is based are concerned, there are very definite intertribal differences in head breadth and in face length and that there is possibly a difference in the face breadth.

We are naturally interested to know whether these differences are great or small. Column No. 3 supplies the desired information inasmuch as it records the minimal extent of the differences. Except in the above two items (three items if width of face be included) the Beaver, Sekani, and Carrier Indians, so far as our investigations have gone, do not differ from each other. That is to say in stature, length of head, width of face, and in the height and width of the nose there are no significant mean differences between the adult males of these tribes.

The Sekanis and Carriers have unusually long faces. Their heads, however, though broader  $(155 \cdot 5 \pm 0 \cdot 63)$  than the heads of the Beavers, are not broader than those of the Saulteaux of Island lake  $(155 \cdot 6 \pm 0 \cdot 49)$ , nor of the Sioux  $(155 \cdot 5 \pm 0 \cdot 16)$ , nor of the Indians of Labrador  $(156 \cdot 8 \pm 0 \cdot 57)$ .

We may now compare the Sekani, Carrier, and Beaver men (who, we have just seen, differ from each other in but two or three respects) with the Chipewyan men. It may be seen on carrying the eye down the fourth columns of sections B and C, that the Chipewyans are shorter in stature than the other three tribes (as evidenced by Diff./P.E. diff. 5.4 and 3.5) and that they have a lower cephalic index, a longer head, and a greater cephalo-facial index. It will be seen that they resemble the Beavers and differ from the Sekanis and Carriers in breadth of head, and that they resemble the Sekanis and Carriers and differ from the Beavers in breadth of face. In height and width of nose there are no significant differences between the men of any of the tribes.

Further, it would appear from section C that the Beavers and Chipewyans have a similar mean sitting height, about 88.5 cms., but that they TABLE XIV

Adult Females (aged 20 to 59 years) of Déné Stock

Ċ	Chilcotin	Mean	$\begin{array}{c} 156.5\\ 866.6\\ 177.2\\ 153.8\\ 153.8\\ 141.3\\ 91.9\\ 91.9\\ 91.9\\ 82.1\\ 82.1\\ 82.1\\ 75.9\\ 75.9\end{array}$	15-22			
	าลท	Diff./ P.E. diff.		•			
H	Chipewy	Mean differ- ence	00000000000000000000000000000000000000	* • • •			
I	Beaver and Chipewyan	Chipe- wyan	$\begin{array}{c} 150.9\\ 150.9\\ 186.6\\ 148.6\\ 148.6\\ 148.6\\ 148.6\\ 148.6\\ 148.6\\ 148.6\\ 120.1\\ 102.4\\ 120.1\\ 175.5\\ 259.1\\ 177.5\\ 80.6\\ 80.6\\ 80.6\\ 80.6\\ 177.5\\ 175.5\\ 177.5\\$	21			
	Be	Beaver	$\begin{array}{c} 156.4\\ 156.4\\ 156.6\\ 147.5\\ 147.5\\ 147.5\\ 103.5\\ 173.8\\ 173.9\\ 250.5\\ 350.2\\ 177.2\\ 177.9\\ 1773$	11			
		Diff./ P.E. diff.	$\begin{array}{c} & & & & & & & & & & & & & & & & & & &$				
	Carrier 1 wyan	Mean differ- ence	$\begin{array}{c} 7\\7.7\\2.1\\2.9\\2.9\\2.9\\1.7\\1.7\end{array}$	•			
E	Sekani and Carrier v. Chipewyan	Sekani and Chipe	Chipe- wyan	$\begin{array}{c} 150.9\\ 79.6\\ 186.6\\ 148.6\\ 144.9\\ 95.5\\ 95.5\\ 51.5\\ 36.2\\ 71.5\\ 71.5\end{array}$	21		
			Se	ŭ	δΩ.	ŭ	Sekani and Carrier
	q	Diff./ P.E. diff.		-			
	Beaver v. Sekani and Carrier	eaver v. Sekani and Carrier	Mean differ- ence	$\begin{array}{c} 22\\ 22\\ 22\\ 22\\ 0.2\\ 0.2\\ 0.3\\ 0.3\\ 0.3\\ 0.3\\ 0.3\\ 0.3\\ 0.3\\ 0.3$	- - - - - -		
Q			Sekani and Carrier Mean	$\begin{array}{c} 158.6\\ 81.5\\ 184.5\\ 184.5\\ 150.6\\ 143.7\\ 95.6\\ 51.5\\ 55.9\\ 69.8\\ 69.8\\ 69.8\end{array}$	31		
		Beaver Mean	$\begin{array}{c} 156.4\\ 156.4\\ 79.1\\ 186.6\\ 147.5\\ 142.1\\ 96.4\\ 82.6\\ 50.5\\ 35.2\\ 70.1\\ \end{array}$	11			
			Stature. Stature. Cephalic index. Cephalic index. Biparietal. Bizygomatic. Prontal-minimum. Menton-rasion. Menton-nasion. Facial index. Nose height. Nose height. Mouth. Mouth. index. Mouth. Mouth. index.	Nos			

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differ from each other in length of lower limb, hence the difference in their stature and sitting height index. In breadth of forehead, in chin to hairline diameter, in length of upper lip, and in the proportions of the ear they do not significantly differ from each other; but in width of mouth and in length and breadth of hand there are certainly differences between the two tribes. The Chipewyan men have the larger mouths; the Beaver men have the smaller hands.

As regards the adult females, aged twenty to fifty-nine years, they are dealt with in the same manner in Table XIV. Jenness measured thirtyone Sekani and Carrier women, and the author measured eleven Beaver. It is evident that the number of Beaver women is too small to deserve much attention. For example, their mean cephalic index is slightly lower than that of the males, which is too contrary to precedent to allow of its being accepted unchallenged on the slender evidence of eleven individuals.

When the Sekani and Carrier women are compared with the Chipewyan women (section E) it will be seen from the fourth column that they differ from each other in much the same respects as do the men of these two tribes, that is, in stature the Chipewyan women are the shorter (Diff./P.E. diff.  $8 \cdot 9$ ), they have a lower cephalic index, and perhaps a shorter and narrower head; there is no significant difference in the width of the face nor is there in the proportions of the nose; a reference, however, to the tables conveys much more than can words.

# SUMMARY

This report deals with the descriptive characters, measurements, and blood groupings of certain tribes of pure Canadian Indians of Déné or Northern Athapascan stock. These tribes are the Beaver Indians of Peace river; and the Sekani, and Eastern and Western Carrier Indians of Fraser river. The number of adults examined were sixty-four males and forty-two females, in all one hundred and six adult persons. In addition to these a number of old people and children were measured. When to these are added the adult Chipewyan Indians examined in 1928 the number of pure, or assumedly pure, Déné Indians is brought up to one hundred and seventy-one, of whom one hundred and eight are men, and sixtythree women.

Of descriptive characters the hair, nose, eye, lips, teeth, digital formula, and blood groups are remarked on: of the sixteen measurements taken twelve are related to the head; the remaining four are stature, sitting height, and length and breadth of hand. The intertribal differences between these Indians are for the most part not great. Notable are the high percentage of eyes of lighter shades among the Carrier and Sekani Indians; and the high percentage of group A blood among the Beaver Indians.

These people are short in stature, broad headed, with very high cephalo-facial index, ranging by tribes from  $96 \cdot 2$  to  $98 \cdot 4$  for the men and from  $95 \cdot 5$  to  $96 \cdot 4$  for the women. These and the other facts related to their measurements are set out clearly in Tables XIII and XIV. For purposes of comparison the measurements of the thirty-six Chilcotin men and twenty-two Chilcotin women, a tribe allied to the Carrier Indians measured by Boas and Farrand in 1897, are considered. They are seen

to have very broad and very short heads, broad and short noses, and a cephalo-facial index of  $93 \cdot 3$  for the men and  $91 \cdot 9$  for the women. This is, of course, surprisingly low, and to be accounted for not by the absolute narrowness of the face but by the relatively very great breadth of the head.

Many tribes of Athapascan Indians, concerning whom no accurate anthropometric data exist, remain to be investigated.

### ACKNOWLEDGMENTS

Mr. Diamond Jenness, Division of Anthropology, National Museum of Canada, not only suggested the field work among the Beaver Indians, but supplied the data collected by himself on the Sekani and Carrier Indians which form the basis of a large part of the report. To him the author gladly expresses his great indebtedness. Thanks are due to Mr. Harold Laird, Indian Agent for the Lesser Slave Lake Agency in whose territory these Indians have their reserves, for facilitating the work in very many ways. And, to Mr. Beaton, Hudson's Bay Company, Old Fort St. John, to Mr. Harris, Hudson's Bay Company, Fort St. John, and to Mr. Russell, Hudson's Bay Company, Hudson Hope, for information concerning these Indians and for various kindnesses. And also, to Inspectors Hancock and Radcliffe, of the Royal Canadian Mounted Police, for the assistance they gave.

# FREQUENCY DISTRIBUTION TABLES

It should be pointed out that the figures given in the frequency distribution tables as class values represent not true class values (i.e., the middle figure of each class range), but the first figure of each class range. This repeats the procedure followed in Bulletin 64, on the Chipewyan Indians. The calculations have been correctly made from the true values.

Abbreviations in the Frequency Distribution Tables

Mean refers to average.

σ	"	standard deviation.
$\mathbf{E}_{\mathbf{m}}$	"	probable error of the mean.
V	46	coefficient of variation.
N	66	number of cases examined.

# Frequency Distribution of Stature

Stature		Male (ag	ged 20 to 5	Female (aged 20 to 59 years)					
in cms.	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
$\begin{array}{r} 146\cdot 5\\ 149\cdot 5\\ 152\cdot 5\\ 155\cdot 5\\ 158\cdot 5\\ 161\cdot 5\\ 164\cdot 5\\ 167\cdot 5\\ 170\cdot 5\\ 170\cdot 5\\ 173\cdot 5\\ 176\cdot 5\\ 179\cdot 5\end{array}$	1 0 1 5 4 8 5 3 0 1	3 4 2 2	$1\\3\\4\\6\\4\\1$	1 0 2 1 0 0 1	1 0 3 7 8 8 7 1	3 3 1 1 2 1	1 0 4 1 3	3 7 7 4	1 0 3 11 8 7
Mean	168.3				169.7	156.4			158.6
σ	$\pm 5.36$				$\pm 4.48$				$\pm 3.44$
Em	$\pm 0.68$				$\pm 0.51$				$\pm 0.42$
V	3.18				2.64				2.17
N	28	11	19	5	35	11	9	21	30

Sitting height	Bea	aver
in cms.	Men	Women
79.8 81.3 82.8 84.3 85.8 87.3 88.8 90.3 91.8 93.3 94.8	$     \begin{array}{c}       1 \\       1 \\       0 \\       1 \\       3 \\       2 \\       1 \\       0 \\       2 \\       0 \\       2 \\       0 \\       2     \end{array} $	
Mean	88.4	
σ	$\pm 4.49$	
Em	$\pm 0.48$	
V	5.08	
N	13	

Sitting Height

Sitting	Height	Index

	Bea	aver
	Men	Women
47 9 51 3 5	$     \begin{array}{c}       1 \\       1 \\       4 \\       5 \\       2     \end{array} $	
Mean	52.4	
σ	±2.17	
Em	±0.41	
v	4.14	
N	13	

# Frequency Distribution of Cephalic Index

Y. d		Male (a)	ged 20 to l	59 years)	Fem	Female (aged 20 to 59 years)			
Index	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
75 77 79 81 83 85 85 87 89	1 4 12 5 6 1	$1 \\ 2 \\ 5 \\ 2 \\ 1 \\ \cdots \\ \cdots$	6 3 4 5 1	1 1 2 0 1	1 3 12 7 5 6 1	1 2 6 1 1	1 4 1 2 1	3 2 7 4 4 1 , 1	1 7 3 9 5 4 1 1
Mean	80.5				81.4	79.1			81.5
σ	$\pm 2.33$				$\pm 2.85$				$\pm 3.33$
Em	$\pm 0.29$				$\pm 0.33$				±0.40n
V	2.89				3.50				4.09
N	29	11	19	5	35	11	9	22	31

JP 137 . [ ]		Male (ag	ged 20 to 5	i9 years)		Female (aged 20 to 59 years)			
Length - of head in mms.	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
$     \begin{array}{c}             174 \\             177 \\             180 \\             183 \\             186 \\             189 \\             192 \\             195 \\             198 \\             201 \\             204 \\             \hline             Mean \\             \sigma \\             E_m \\             V \\             N       \end{array} $	$     \begin{array}{r}       1 \\       0 \\       3 \\       5 \\       13 \\       5 \\       2     \end{array} $ $     \begin{array}{r}       189.4 \\       \pm 3.73 \\       \pm 0.47 \\       1.97 \\       29   \end{array} $		2 4 5 4 2 2		$ \begin{array}{c}  & 4 \\  & 6 \\  & 9 \\  & 9 \\  & 9 \\  & 4 \\  & 2 \\  & 0 \\  & 1 \\ \hline  & 191 \cdot 2 \\  & \pm 4 \cdot 66 \\  & \pm 0 \cdot 53 \\ \hline  & 2 \cdot 44 \\ \hline  & 35 \\ \end{array} $	3 2 3 1 1 1 1 1 			$ \begin{array}{r} 1 \\ 4 \\ 7 \\ 4 \\ 10 \\ 2 \\ 3 \\ \hline 184 \cdot 5 \\ \pm 4 \cdot 70 \\ \pm 0 \cdot 57 \\ \hline 2 \cdot 55 \\ \hline 31 \\ \end{array} $

Frequency Distribution of Length of Head (Glabella ad Maximum)

Frequency Distribution of Width of Head (Biparietal Maximum)

Width		Male (a	ged 20 to E	59 years)	Fem	Female (aged 20 to 59 years)			
of head in mms.	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
$138 \\ 141 \\ 144 \\ 147 \\ 150 \\ 153 \\ 156 \\ 159 \\ 162 \\ 165$	1 1 6 11 2 2	4 5 2	3 4 5 3 1 3	1 1 1 0 1 1 1	4 9 7 6 3 2 4	$ \begin{array}{c} 1 \\ 0 \\ 5 \\ 0 \\ 4 \\ 1 \\ \dots \\ \dots$	54	1 1 4 5 6 3 1 1	1 6 8 5 6 3 1 1
Mean	152.0				155.5	147.5			150.6
σ	±4.04				$\pm 5.48$				$\pm 4.92$
Em	$\pm 0.51$				$\pm 0.63$			• • • • • • • • • •	$\pm 0.60$
V	2.66				3.53				3.27
N	29	11	19	5	35	11	9	22	31

Width		Male (a	ged 20 to 8	Fem	ale (aged	20 to 59 ye	ears)		
of face in mms.	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
$132 \\ 135 \\ 138 \\ 141 \\ 144 \\ 147 \\ 150 \\ 153 \\ 156 \\ 159 \\ 162$	$1 \\ 5 \\ 4 \\ 12 \\ 5 \\ 2$	6 2 2 1	$1 \\ 0 \\ 2 \\ 2 \\ 8 \\ 1 \\ 1 \\ 2 \\ 2 \\$	1 0 1 0 1 1 1 1	$egin{array}{cccc} 1 \\ 0 \\ 2 \\ 9 \\ 10 \\ 4 \\ 2 \\ 3 \\ 3 \\ 1 \end{array}$		4 2 2 i	1 4 3 3 8 0 2	1 1 8 5 5 9 0 2
Mean	147.2				149.5	142.1			143.7
σ	$\pm 3.69$				$\pm 5.93$				$\pm 4.93$
Em	$\pm 0.46$				$\pm 0.68$				$\pm 0.60$
V	2.51				3.97				3.43
N	29	11	19	5	35	11	9	22	31

Frequency Distribution of Width of Face (Bizygomatic Maximum)

Frequency Distribution of Cephalo-facial Index (Bizygomatic-Biparietal)

		Male (ag	ged 20 to 3	59 years)	Female (aged 20 to 59 years)				
-	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
89 91 93 95 97 99 101 103	3 10 11 4 1	3 4 2 0 1	3 7 5 3 0 1	1 3 0 1	3 7 9 10 2 2 1	3 2 5 1		1 2 5 8 6	$1 \\ 2 \\ 5 \\ 11 \\ 10 \\ 0 \\ 1 \\ \dots \dots \dots$
Mean	96.8				96.2	96-4			95.6
σ	±1.91				$\pm 2.82$				$\pm 2.34$
Em	$\pm 0.24$				$\pm 0.33$				$\pm 0.29$
v	1.98				2.93				2.45
N	29	10	19	5	34	11	8	22	30

Width of	Be	aver	Length of	Bea	ver
forehead in mms.	Male (20 to 59 years)	Female (20 to 59 years)	face in mms.	Male (20 to 59 years)	Female (20 to 59 years)
94 97 100 103 106 109 112 Mean	$     \begin{array}{r}       1 \\       2 \\       6 \\       14 \\       4 \\       2 \\       103 \cdot 5 \\       103 \cdot 5 \\       \hline       \end{array} $	$ \begin{array}{r}     2 \\     1 \\     1 \\     4 \\     1 \\     0 \\     2 \\     \hline     103 \cdot 5 \\ \end{array} $	160 165 170 175 180 185 190 195	3 6 9 5 5 5 1	$\begin{array}{c}2\\1\\2\\5\\1\end{array}$
		103-3	Mean	183.0	173.8
σ	$\pm 3 \cdot 26$		σ	$\pm 6.62$	
Em	±0.41		Em	±0.83	
v	3.15			3.62	
N	29	11			
			N	29	11

# Frequency Distribution of Width of Forehead (Frontal Minimum)

# Frequency Distribution of Length of Face (Menton-Crinion)

Frequency Distribution of Length of Face (Menton-Nasion)

Length		Male (ag	ged 20 to 5	9 years)	Female (aged 20 to 59 years)			ears)	
of face in mms.	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
$104 \\ 107 \\ 110 \\ 113 \\ 116 \\ 119 \\ 122 \\ 125 \\ 128 \\ 131 \\ 134 \\ 137 \\ 140$	1 2 3 5 12 3 3 		1 2 1 3 1 4 3 4		1 3 5 8 2 5 6 4 0 1	1 0 1 2 2 1 3 1		2 3 1 4 3 3 5 0 1	4 6 3 6 3 3 5 0 1
Mean	121.8				126.3	117.4			117.2
σ	$\pm 4.35$				$\pm 6.43$				$\pm 6.55$
Em	$\pm 0.55$				$\pm 0.73$				$\pm 0.79$
V	3.57				5.09				5-59
N	29	11	19	5	35	11	9	22	31

		Male (ag	ged 20 to 5	Fem	Female (aged 20 to 59 years)				
Index	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
73 76 79 82 85 88 91	1 1 7 9 11	$\begin{array}{c}1\\2\\3\\2\\1\\2\end{array}$	1 0 3 4 5 3 3	2 0 2 1	1 3 5 9 8 4 5	1 2 1 3 3 1	4 2 2	4 6 2 7 2 1	8 8 4 7 2 1
Mean	82.9				84.5	82.6			82.0
σ	$\pm 3.10$				$\pm 4.72$				$\pm 4.27$
Em	$\pm 0.39$				$\pm 0.54$				$\pm 0.53$
V	3.74				5 • 59				5.20
N	29	11	19	5	35	1	8	22	30

Frequency Distribution of Facial Index (Menton-Nasion-Bizygomatic Maximum)

Frequency Distribution of Length of Upper Lip

	Beaver						
Length of upper lip in mms.	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)					
9 11 13 15 17 19	1 0 0 2 6 11						
Mean	18						
σ	$\pm 2.36$						
Em	$\pm 0.36$						
V	13.09						
N	20						

Height		Male (a	ged 20 to l	59 years)	Fem	ale (aged	20 to 59 y	ears)	
of nose in mms.	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
44 47 50 53 56 59 62	$26 \\ 12 \\ 7 \\ 2$	4 5 2	1 2 4 8 3 1	1 2 0 2	$     \begin{array}{c}             1 \\             7 \\           $	1 3 3 4	1 4 4	5 5 8 4	1 9 9 8 4
Mean	$54 \cdot 1$				$55 \cdot 2$	50.5			51.5
σ	$\pm 3 \cdot 0$				$\pm 3.38$				$\pm 3 \cdot 24$
$\mathbf{E}_{\mathbf{m}}$	$\pm \cdot 38$				$\pm 0.39$				$\pm 0.39$
v	5.54				6.12				6.30
N	29	11	19	5	35	11	9	22	31

· Frequency Distribution of Height of Nose

Frequency Distribution of Width of Nose

Width	Male (aged 20 to 59 years)					Female (aged 20 to 59 years)			
of nose in mms.	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
31 33 35 37 39 41 43 45	1 3 6 4 6 3	2 3 2 4	$\begin{array}{c} 2\\ 2\\ 8\\ 6\\ 1\\ \end{array}$	1 0 2 0 1 1	$2 \\ 6 \\ 4 \\ 14 \\ 6 \\ 2 \\ 1$	5 3 2 1	45	2 10 8 2	6 15 8 2
Mean	38.2				39.0	$35 \cdot 2$			35.9
σ	$\pm 3.29$				$\pm 2.76$				±1.64
Em	±0.41	• • • • • • • • • •			±0.32				$\pm 0.20$
V	8.62				7-08				4.57
N	29	11	19	5	35	11	9	22	31

	Male (aged 20 to 59 years)				Female (aged 20 to 59 years)				
Index	Beaver	Sekani	Eastern Carrier	Western Carrier	Total of three bands	Beaver	Sekani	Eastern Carrier	Total of two bands
55 60 65	$1 \\ 6 \\ 7$	2 3 3 2	2 8 5 3	2	4 13	1 6	4		4 11
70 75 80 85	7 3 4 1	3 2	5 3 1	0 2 1	8 7 2	$egin{array}{c} 1 \\ 2 \\ 0 \\ 1 \end{array}$	$\begin{array}{c} 4\\ 2\\ 2\\ \cdots\\ \cdots\\ \end{array}$	8 2 1	10 4 1
Mean	70.6				70.5	70.1			69.8
σ	$\pm 7.53$				$\pm 5 \cdot 50$				$\pm 4.95$
Em	$\pm 0.94$				$\pm 0.64$				$\pm 0.61$
V	10.66				7.79				7.08
N	29	10	19	5	34	11	8	22	30

Frequency Distribution of Nasal Index

Frequency Distribution of Width of Frequency Distribution of Length of Mouth Ear

Width	Bea	ver	Longth of	Bea	iver
of mouth in mms.	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)	Length of ear in mms.	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)
$\begin{array}{cccc} 48 & ..\\ 51 & ..\\ 54 & .\\ 57 & .\\ 60 & .\\ 63 & .\\ 66 & .\\ \end{array}$	$     \begin{array}{c}             1 \\             3 \\           $	1 0 5 4 1	$59 \\ 62 \\ 65 \\ 68 \\ 71 \\ 74$	$\begin{array}{c} 4\\8\\9\\2\\3\\1\end{array}$	
Mean	60.0	56.4	Mean	65-4	
σ	$\pm 3.28$		σ	$\pm 3.92$	
Em	±0·41		Em	$\pm 0.51$	
V	5.46		v	5.99	
N	29	11	N	27	

Width of	Bea	Beaver				
ear in mms.	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)				
31 33 35 37 39 41	$2 \\ 5 \\ 9 \\ 4 \\ 6 \\ 1$					
Mean	36.2					
σ	$\pm 2.62$					
Em	$\pm 0.34$					
V	7.23					
N	27					

Frequency Distribution of Ear Index

T

	Beaver					
Index	Male (Aged 20 to 59 years)	Female (aged 20 to 59 years)				
49     52     55     58     61     64     67	7 7 5 5 2 0 1					
Mean	55-1					
σ	$\pm 4.53$					
Em	$\pm 0.59$					
v	8.22					
N	27					

Frequency Distribution of Width of Ear

Frequency Distribution of Length of Frequency Distribution of Width of Hand Hand

T (1) (	Beaver					
Length of hand in mms.	Male (aged 20 to 59 years)	Fomale (aged 20 to 59 years)				
160 165 170 175 180 185 190 195	$     \begin{array}{c}       1 \\       0 \\       1 \\       6 \\       9 \\       8 \\       3 \\       1     \end{array} $	1 2 2 4 1 1				
Mean	182.9	173.9				
σ	$\pm 6.83$					
Em	$\pm 0.86$					
v	3.74					
N	29	11				

Wilsh -f	Beaver					
Width of hand in mms.	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)				
73 76 79 82 85 88 91 94	4 12 8 4 0 1	3 3 3 2				
Mean	84.7	78.2				
σ	$\pm 3.30$					
Em	±0.41					
V	3.90					
N	29	11				

	Bea	Beaver					
Index	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)					
43 45 47 49	5 11 9 3 1	3 6 2					
51 Mean	46.4	45.0					
σ	±2.01						
Em	$\pm 0.25$						
v	4.32						
N	29	11					

# Frequency Distribution of Hand Index

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APPENDIX I Particulars of Beaver Men 28

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$ \begin{bmatrix} 69 & C & 0 & 0 & 0 & D \\ 72 & F & 0 & 0 & 0 & D & + & 1 \\ 83 & C & 0 & 0 & 0 & D & + & 0 \\ 72 & M & 0 & 0 & 0 & D & + & 0 & \cdots & M \\ \end{bmatrix} $
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# Blood group Incieore irregular Teeth decayed Number Ear lobule (seenabilty) qi.l Colour of sciera aidanaaiqA blol Eye Palpebral fissure Colour of iris Среек Beard Hair Moustache $\mathbf{bs}\mathbf{sH}$ изы Hand Гепдећ Upper lip (length) нзы Ear digno.I Mouth (width) Shape Nose чэрім ЦэдаэЛ crinion -noinsM noisen -noinsM Frontal muminim Head Bizygomatic mumi**x**sm lateiregia mumixem unuixeui Glabella ad tdyish yaittiS Stature əzv

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PURE BEAVER. WOMEN (aged 20 to 59 years)

APPENDIX II

Particulars of Beaver Women

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APPENDIX	

Distribution and Particulars of Carious Teeth

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Beaver 3, White 1. Men

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<sup>1</sup>All adult and old Beaver Indians and Beaver-White breeds not represented in this appendix had sound teeth.

Blank space (....)=sound tooth.

X=carious tooth.

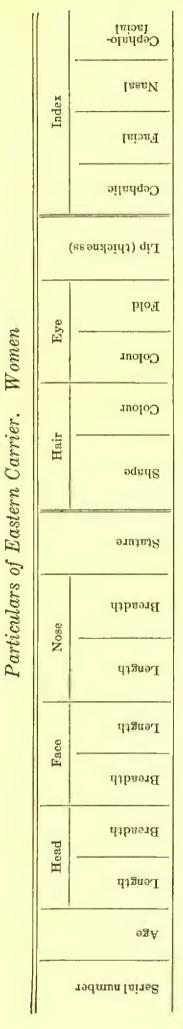
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APPENDIX V

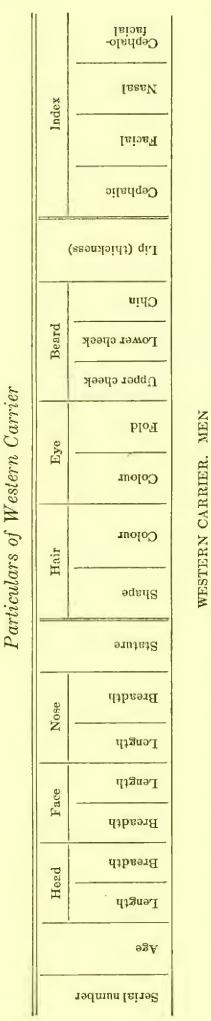
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WESTERN CARRIER. OLD WOMEN



Beaver Indians at St. John





Beaver Indians at St. John





Beaver Indians at St. John

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Beaver Indians at Hudson Hope

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Beaver Indians at Hudson Hope



Beaver Indians at Hudson Hope

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