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**BULLETIN No. 81**

ANTHROPOLOGICAL SERIES, No. 18

**Anthropometry of the Beaver, Sekani,  
and Carrier Indians**

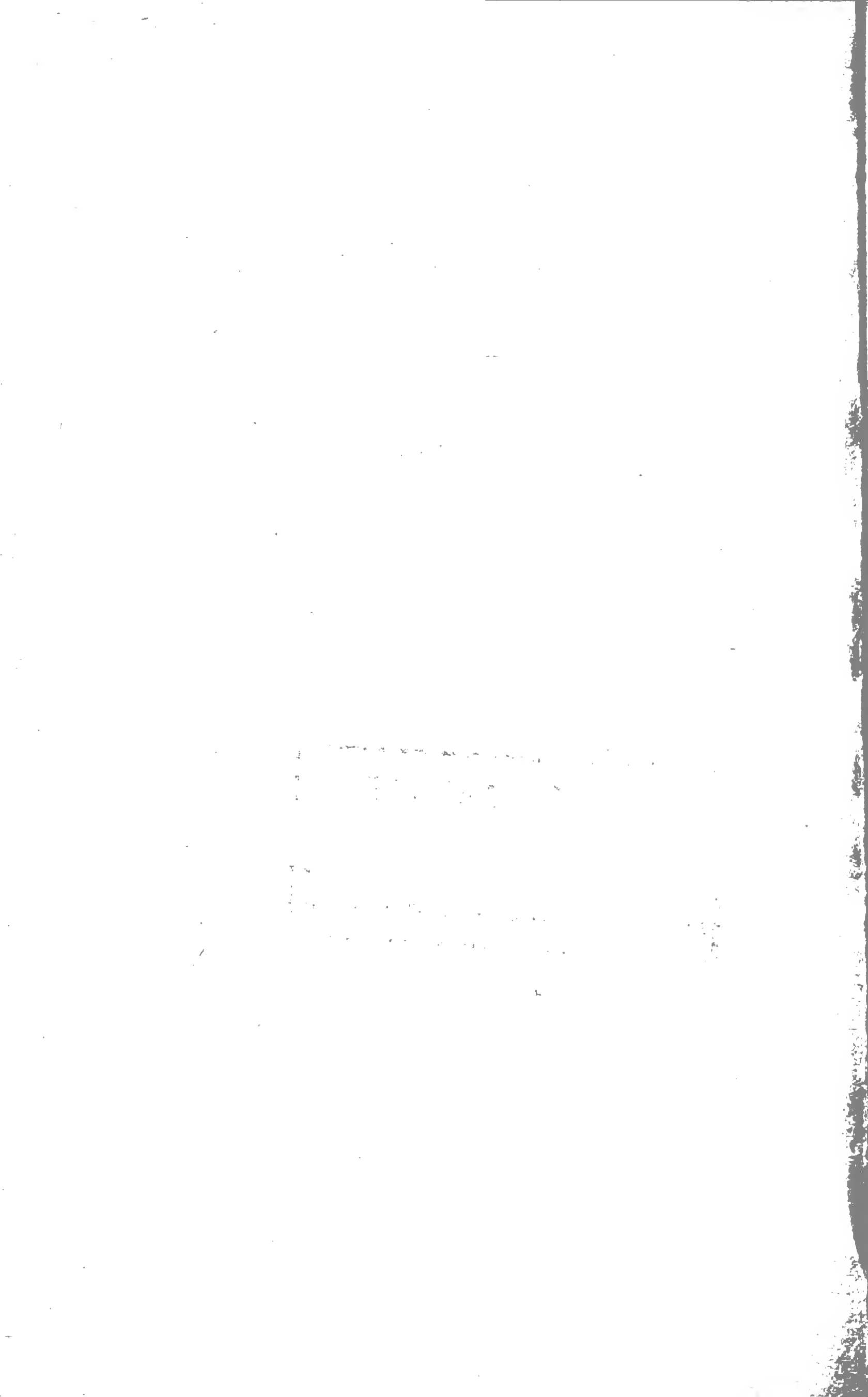
BY

J. C. Boileau Grant ✓



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# 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>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
	Aged 20 to 59	Aged 60+	Aged 20 to 59	Aged 60+	Boys	Girls	
Beaver, pure.....	29	6	11	2	4	2	54
Beaver-white.....	1	1	3	.....	1	.....	6
$\frac{3}{4}$ Beaver-white.....	.....	.....	1	.....	.....	.....	1
$\frac{1}{2}$ Cree, pure.....	3	6	7	2	.....	.....	18
Cree-white.....	2	.....	.....	.....	.....	.....	2
$\frac{7}{8}$ Cree-white.....	11	.....	5	1	.....	1	18
$\frac{6}{8}$ Cree-white.....	7	1	10	1	2	3	24
$\frac{4}{8}$ Cree-white.....	3	.....	2	.....	1	1	7
$\frac{2}{8}$ Cree-white.....	.....	.....	.....	.....	.....	1	1
$\frac{1}{8}$ Cree-Beaver.....	8	2	4	.....	.....	.....	14
$\frac{6}{8}$ Cree-Beaver.....	.....	.....	2	.....	.....	3	5
$\frac{7}{8}$ 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.

*Abbreviations in the Appendices*

Bridge of the nose	S = Straight	
	X = Convex	
	XV = Concavo-convex	
	V = Concave	
Hair of the head	VC = Very coarse	
	C = Coarse	
	M = Medium	
	F = Fine	
Hair on the face	0 = Absent	
	1 = Very scanty	
	2 = Appreciable	
	3 = marked amount	
Colour of iris	Bl = Black	
	D = Dark	} Brown
	D-M = Dark to medium	
	M = Medium	
	L = Light	
	Gr = Grey	
Palpebral fissure	= = On the same level	
Relation of lateral canthus to medial canthus	+ = Slightly	} Higher
	+ <sup>2</sup> = Moderately	
	+ <sup>3</sup> = Markedly	
Epicanthic fold	0 = Absent	
	1 = Slight	
	2 = Medium	
	3 = Marked	
Colour of sclera	C = Clear	
	Y = Yellowish	
	D = Dull	
Lip thickness	Tn = Thin	
	M = Medium	
	Tk = Thick	
Ear lobule	F = Free	
	A = Attached	
Teeth	X = Carious tooth	
	Blank space = Sound tooth	
Incisors irregular	0 = Regular or in alinement	
	1 = Slightly	} Out of alinement
	2 = Moderately	
	3 = Extremely	

Blood groups	O	A	B	AB	
	1	2	3	4	Jansky
	4	2	3	1	Moss

## DESCRIPTIVE CHARACTERS OF PURE BEAVER INDIANS

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 twenty-eight 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	Very coarse	Coarse	Medium	Fine
Beaver Indians (pure)		%	%	%	%
Men and old men.....	35	6	57	23	14
Women and old women.....	13	.....	7.5	61.5	31
Chipewyan Indians (Fond-du-Lac band)					
Men.....	30	.....	53	47	.....
Women.....	21	.....	9.5	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.

TABLE III

*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.....	35	20	26	40	14	.....
Women and old women.....	13	23	15	8	54	.....
Chipewyan Indians (Fond-du-Lac)						
Men.....	30	23	57	7	7	7
Women.....	21	14	33.5	33.5	19	.....

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:

TABLE IV  
*Relation, in Percentages, of Lateral to Medial Palpebral Canthus*

—	Numbers examined	Same level	Higher		
			Slightly	Moderately	Markedly
Beaver Indians (pure)		%	%	%	%
Men and old men.....	34	6	79	9	6
Women and old women.....	13	.....	85	15	.....

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 (13·3 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.

TABLE V  
*Distribution, in Percentages, of the Colour of the Eye (Iris)*

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

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								Total
	M <sub>3</sub>	M <sub>2</sub>	M <sub>1</sub>	Pm <sub>2</sub>	Pm <sub>1</sub>	C	I <sub>2</sub>	I <sub>1</sub>	I <sub>1</sub>	I <sub>2</sub>	C	Pm <sub>1</sub>	Pm <sub>2</sub>	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	
Upper.....	10	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	6	19
Lower.....	23	3	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	16	26	80

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  $3 > 4 > 2 > 5 > 1$ .<sup>1</sup>

<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.

TABLE VII  
*Blood Groups*

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

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:

TABLE VIII  
*Blood Groups in Percentages*

Tribe of Indians	Number examined	O	A	B	AB
Pure Beaver Indians.....	40	% 52.5	% 47.5		
Non-Beaver Indians and breeds in Peace River region.....	61	62	38		
Chipewyan Indians <sup>1</sup> .....	69	80	10	10	
Mackenzie River Indians (Gates) <sup>2</sup> .....	71	84.5	15.5		
Pure Indians (Snyder) <sup>3</sup> .....	453	91.3	7.7	10	

<sup>1</sup>Grant, J. C. B.: "Anthropometry of the Chipewyan and Cree Indians"; Bull. No. 64, Anth. Ser., No. 14, National Museum of Canada (1930).

<sup>2</sup>Gates, R. R.: "Blood Groups of Canadian Indians and Eskimos"; Am. Jour. Phys. Anth., vol. 12, No. 3 (1929).

<sup>3</sup>Snyder, L. H.: "Human Blood Groups"; Am. Jour. Phys. Anth., vol. 9, No. 2 (1926).

## 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 eighty-five individuals who are distributed as follows:

TABLE IX  
*Distribution of Individuals Examined in 1923*

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

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.

TABLE X

Tribe	Numbers examined	Moustache				Cheek				Beard			
		0	1	2	3	0	1	2	3	0	1	2	3
Sekani.....	14	12	2	.....	.....	10	4	.....	.....	1	9	4	.....
Western Carrier.....	12	9	3	.....	.....	8	4	.....	.....	2	5	5	.....
Eastern Carrier.....	23	23	.....	.....	.....	19	4	.....	.....	4	12	7	.....
Total.....	49	44	5	.....	.....	37	12	.....	.....	7	26	16	.....
Percentages.....	.....	90	10	.....	.....	75.5	24.5	.....	.....	14	53	33	.....

(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 XI

*Distribution of the Colour of the Eye (Iris)*

MEN AND OLD MEN						
Tribe	Number examined	Black	Brown			Blue <sup>1</sup> or grey
			Dark	Medium	Light	
Sekani.....	14	.....	7	7	.....	.....
Western Carrier.....	11	.....	4	5	2	.....
Eastern Carrier.....	23	.....	12	8	3	.....
Total.....	48	.....	23	20	5	.....
Percentages.....	.....	.....	48	42	10	.....

WOMEN AND OLD WOMEN						
Tribe	Number examined	Black	Brown			Blue <sup>1</sup> or grey
			Dark	Medium	Light	
Sekani.....	10	.....	9	1	.....	.....
Western Carrier.....	1	.....	1	.....	.....	.....
Eastern Carrier.....	24	.....	15	9	.....	.....
Total.....	35	.....	25	10	.....	.....
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

*Summary of Means and Probable Errors of Means*

	Males (20 to 59 years)			Females (20 to 59 years)		
	Beaver	Chipewyan Fond-du- Lac	Sekani, Eastern Carrier, Western Carrier	Beaver	Chipewyan Fond-du- Lac	Sekani, Eastern Carrier
Maximum number of cases <sup>1</sup> ....	29	33	35	11	21	31
Stature.....	168.3 ±0.68	164.7 ±0.78	169.7 ±0.51	156.4	150.9 ±0.76	158.6 ±0.42
Sitting height.....	88.4 ±0.84	88.7 ±0.30	.....	.....	82.4 ±0.52	.....
Index of sitting height.....	52.4 ±0.41	53.9 ±0.26	.....	.....	54.8 ±0.29	.....
Cephalic index.....	80.5 ±0.29	78.8 ±0.23	81.4 ±0.33	79.1	79.6 ±0.25	81.5 ±0.40
Glabella ad maximum.....	189.4 ±0.47	193.8 ±0.68	191.2 ±0.53	186.6	186.6 ±0.58	184.5 ±0.57
Biparietal.....	152.0 ±0.51	152.9 ±0.54	155.5 ±0.63	147.5	148.6 ±0.52	150.6 ±0.60
Bizygomatic.....	147.2 ±0.46	150.0 ±0.58	149.5 ±0.68	142.1	141.9 ±0.74	143.7 ±0.60
Cephalo-facial index.....	96.8 ±0.24	98.4 ±0.31	96.2 ±0.33	96.4	95.5 ±0.42	95.6 ±0.29
Frontal minimum.....	103.5 ±0.41	104.6 ±0.70	.....	103.5	102.4 ±0.53	.....
Menton-crinion.....	183.0 ±0.83	186.6 ±0.96	.....	173.8	180.8 ±1.13	.....
Menton-nasion.....	121.8 ±0.55	124.1 ±0.78	126.3 ±0.73	117.4	120.1 ±0.77	117.2 ±0.79
Facial index.....	82.9 ±0.39	82.6 ±0.41	84.5 ±0.54	82.6	84.9 ±0.44	82.0 ±0.53
Upper lip (length).....	18.0 ±0.36	19.2 ±0.54	.....	.....	.....	.....
Nose height.....	54.1 ±0.38	54.0 ±0.39	55.2 ±0.39	50.5	51.5 ±0.63	51.5 ±0.39
Nose width.....	38.2 ±0.41	39.4 ±0.38	39.0 ±0.32	35.2	36.2 ±0.33	35.9 ±0.20
Nasal index.....	70.6 ±0.94	72.9 ±0.84	70.5 ±0.64	70.1	71.5 ±1.19	69.8 ±0.61
Mouth (length).....	60.0 ±0.41	62.3 ±0.31	.....	56.4	59.1 ±0.50	.....
Ear length.....	65.4 ±0.51	66.1 ±0.63	.....	.....	.....	.....
Ear width.....	36.2 ±0.34	37.3 ±0.30	.....	.....	.....	.....
Ear index.....	55.1 ±0.59	56.9 ±0.57	.....	.....	.....	.....
Hand length.....	182.9 ±0.86	189.9 ±0.81	.....	173.9	177.5 ±0.99	.....
Hand width.....	84.7 ±0.41	88.9 ±0.52	.....	78.2	80.6 ±0.48	.....
Hand index.....	46.4 ±0.25	47.2 ±0.25	.....	45.0	45.7 ±0.30	.....

<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.

TABLE XIII

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

	A Beaver v. Sekani and Carrier			B Sekani and Carrier v. Chipewyan			C Beaver v. Chipewyan			D Chilcotin <sup>1</sup>			
	Beaver Mean	Sekani and Carrier Mean	Mean difference	Diff./P.E. diff.	Sekani and Carrier Mean	Chipewyan Mean	Mean difference	Diff./P.E. diff.	Beaver Mean	Chipewyan	Mean difference	Diff./P.E. diff.	Mean
Stature.....	168.3	169.7	1.4	1.7	169.7	164.7	5.0	5.4	168.3	164.7	3.6	3.5	165.1
Sitting height.....									88.4	88.7	0.3	0.3	
Sitting height index.....									52.4	53.9	1.5	3.1	
Cephalic index.....	80.5	81.4	0.9	2.1	81.4	78.8	2.6	6.5	80.5	78.8	1.7	4.6	85.1
Glabella ad maximum.....	189.4	191.2	1.8	2.5	191.2	193.8	2.6	3.0	189.4	193.8	4.4	5.3	186.6
Biparietal.....	152.0	155.5	3.5	4.3	155.5	152.9	2.6	3.1	152.0	152.9	0.9	1.2	158.8
Bizygomatic.....	147.2	149.5	2.3	2.8	149.5	150.0	0.5	0.6	147.2	150.0	2.8	3.8	148.2
Cephalo-facial index.....	96.8	96.2	0.6	1.5	96.2	98.4	2.2	4.9	96.8	98.4	1.6	4.1	93.3
Frontal-minimum.....									103.5	104.6	1.1	1.4	
Menton-crinion.....									183.0	186.6	3.6	2.8	
Menton-nasion.....	121.8	126.3	4.5	4.9	126.3	124.1	2.2	2.1	121.8	124.1	2.3	2.4	124.3
Facial index.....	82.9	84.5	1.6	2.4	84.5	82.6	1.9	2.8	82.9	82.6	0.3	0.5	83.9
Upper lip.....									18.0	19.2	1.2	1.9	
Nose height.....	54.1	55.2	1.1	2.0	55.2	54.0	1.2	2.2	54.1	54.0	0.1	0.2	53.2
Nose width.....	38.2	39.0	0.8	1.5	39.0	39.4	0.4	0.8	38.2	39.4	1.2	2.2	39.3
Nose index.....	70.6	70.5	0.1	0.1	70.5	72.9	2.4	2.3	70.6	72.9	2.3	1.8	74.2
Mouth.....									60.0	62.3	2.3	4.5	
Ear length.....									65.4	66.1	0.7	0.9	
Ear width.....									36.2	37.3	1.1	2.4	
Ear index.....									55.1	56.9	1.8	2.2	
Hand length.....									182.9	189.9	7.0	5.9	
Hand width.....									84.7	88.9	4.2	6.3	
Hand index.....									46.4	47.2	0.8	2.3	
Nos.....	29	35			35	33			29	33			36

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

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 3.0 or more as significant of a real difference in mean measurements, and if we accept a result of less than 3.0 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 4.3) and the menton-nasion diameter of the face (Diff./P.E. diff. of 4.9). 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 2.3 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 16.0 to 1.0). 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 ( $155.5 \pm 0.63$ ) than the heads of the Beavers, are not broader than those of the Saulteaux of Island lake ( $155.6 \pm 0.49$ ), nor of the Sioux ( $155.5 \pm 0.16$ ), nor of the Indians of Labrador ( $156.8 \pm 0.57$ ).

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

	D Beaver v. Sekani and Carrier				E Sekani and Carrier v. Chipewyan				F Beaver and Chipewyan				G Chilcotin
	Beaver Mean	Sekani and Carrier Mean	Mean difference	Diff./P.E. diff.	Sekani and Carrier	Chipewyan	Mean difference	Diff./P.E. diff.	Beaver	Chipewyan	Mean difference	Diff./P.E. diff.	Mean
Stature.....	156.4	158.6	2.2		158.6	150.9	7.7	8.9	156.4	150.9	5.5		156.5
Cephalic index.....	79.1	81.5	2.4		81.5	79.6	1.9	4.0	79.1	79.6	0.5		86.6
Glabella ad maximum.....	136.6	134.5	2.1		134.5	136.6	2.1	2.6	136.6	136.6	0.0		177.2
Biparietal.....	147.5	150.6	3.1		150.6	148.6	2.0	2.5	147.5	148.6	1.1		153.8
Bizygomatic.....	142.1	143.7	1.6		143.7	141.9	1.8	1.9	142.1	141.9	0.2		141.3
Cephalo-facial index.....	96.4	95.6	0.8		95.6	95.5	0.1	0.2	96.4	95.5	0.9		91.9
Frontal-minimum.....									103.5	102.4	1.1		
Menton-union.....									173.8	180.8	7.0		
Menton-nasion.....	117.4	117.2	0.2		117.2	120.1	2.9	2.6	117.4	120.1	2.7		115.8
Facial index.....	82.6	82.0	0.6		82.0	84.9	2.9	4.2	82.6	84.9	2.3		82.1
Nose height.....	50.5	51.5	1.0		51.5	51.5	0.0	0.0	50.5	51.5	1.0		48.1
Nose width.....	35.2	35.9	0.7		35.9	36.2	0.3	0.8	35.2	36.2	1.0		36.1
index.....	70.1	69.8	0.3		69.8	71.5	1.7	1.3	70.1	71.5	1.4		75.9
Mouth.....									56.4	59.1	2.7		
Hand length.....									173.9	177.5	3.61		
width.....									78.2	80.6	2.4		
index.....									45.0	45.7	0.7		
Nos.....	11	31			31	21			11	21			15-22

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 hair-line 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 thirty-one 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. 8.9), 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 sixty-three 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 96.2 to 98.4 for the men and from 95.5 to 96.4 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 93·3 for the men and 91·9 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.

$\sigma$  " standard deviation.

$E_m$  " probable error of the mean.

V " coefficient of variation.

N " number of cases examined.

*Frequency Distribution of Stature*

Stature in cms.	Male (aged 20 to 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
146.5							1		1
149.5						3	0		0
152.5	1					3	0	3	3
155.5	0			1	1	1	4	7	11
158.5	1			0	0	1	1	7	8
161.5	5		1	2	3	2	3	4	7
164.5	4	3	3	1	7	1			
167.5	8	4	4	0	8				
170.5	5	2	6	0	8				
173.5	3	2	4	1	7				
176.5	0		1		1				
179.5	1								
Mean	168.3				169.7	156.4			158.6
$\sigma$	$\pm 5.36$				$\pm 4.48$				$\pm 3.44$
$E_m$	$\pm 0.68$				$\pm 0.51$				$\pm 0.42$
V	3.18				2.64				2.17
N	28	11	19	5	35	11	9	21	30



*Sitting Height*

Sitting height in cms.	Beaver	
	Men	Women
79.8	1	.....
81.3	1	.....
82.8	0	.....
84.3	1	.....
85.8	3	.....
87.3	2	.....
88.8	1	.....
90.3	0	.....
91.8	2	.....
93.3	0	.....
94.8	2	.....
Mean	88.4	.....
$\sigma$	$\pm 4.49$	.....
$E_m$	$\pm 0.48$	.....
V	5.08	.....
N	13	.....

*Sitting Height Index*

	Beaver	
	Men	Women
47	1	.....
9	1	.....
51	4	.....
3	5	.....
5	2	.....
Mean	52.4	.....
$\sigma$	$\pm 2.17$	.....
$E_m$	$\pm 0.41$	.....
V	4.14	.....
N	13	.....

*Frequency Distribution of Cephalic Index*

Index	Male (aged 20 to 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
75	1	1	.....	.....	1	1	1	.....	1
77	4	2	.....	1	3	2	4	3	7
79	12	5	6	1	12	6	1	2	3
81	5	2	3	2	7	1	2	7	9
83	6	1	4	0	5	1	1	4	5
85	1	.....	5	1	6	.....	.....	4	4
87	.....	.....	1	.....	1	.....	.....	1	1
89	.....	.....	.....	.....	.....	.....	.....	1	1
Mean	80.5	.....	.....	.....	81.4	79.1	.....	.....	81.5
$\sigma$	$\pm 2.33$	.....	.....	.....	$\pm 2.85$	.....	.....	.....	$\pm 3.33$
$E_m$	$\pm 0.29$	.....	.....	.....	$\pm 0.33$	.....	.....	.....	$\pm 0.40n$
V	2.89	.....	.....	.....	3.50	.....	.....	.....	4.09
N	29	11	19	5	35	11	9	22	31

*Frequency Distribution of Length of Head (Glabella ad Maximum)*

Length of head in mms.	Male (aged 20 to 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
174								1	1
177	1						2	2	4
180	0					3	0	5	7
183	3	2	2		4	2	0	4	4
186	5	1	4	1	6	3	3	7	10
189	13	3	5	1	9	1	1	1	2
192	5	3	4	2	9	1	1	2	3
195	2	2	2	0	4	1			
198			2	0	2				
201				0	0				
204				1	1				
Mean	189.4				191.2	186.6			184.5
$\sigma$	$\pm 3.73$				$\pm 4.66$				$\pm 4.70$
$E_m$	$\pm 0.47$				$\pm 0.53$				$\pm 0.57$
V	1.97				2.44				2.55
N	29	11	19	5	35	11	9	22	31

*Frequency Distribution of Width of Head (Biparietal Maximum)*

Width of head in mms.	Male (aged 20 to 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
138						1			
141	1					0		1	1
144	1					5	5	1	6
147	6	4			4	0	4	4	8
150	6	5	3	1	9	4		5	5
153	11	2	4	1	7	1		6	6
156	2		5	1	6			3	3
159	2		3	0	3			1	1
162			1	1	2			1	1
165			3	1	4				
Mean	152.0				155.5	147.5			150.6
$\sigma$	$\pm 4.04$				$\pm 5.48$				$\pm 4.92$
$E_m$	$\pm 0.51$				$\pm 0.63$				$\pm 0.60$
V	2.66				3.53				3.27
N	29	11	19	5	35	11	9	22	31

*Frequency Distribution of Width of Face (Bizygomatic Maximum)*

Width of face in mms.	Male (aged 20 to 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
132								1	1
135			1		1	1		1	1
138	1		0		0	3	4	4	8
141	5		2		2	3	2	3	5
144	4	6	2	1	9	3	2	3	5
147	12	2	8	0	10	1	1	8	9
150	5	2	1	1	4			0	0
153	2	1	1	0	2			2	2
156			2	1	3				
159			2	1	3				
162				1	1				
Mean	147.2				149.5	142.1			143.7
$\sigma$	$\pm 3.69$				$\pm 5.93$				$\pm 4.93$
$E_m$	$\pm 0.46$				$\pm 0.68$				$\pm 0.60$
V	2.51				3.97				3.43
N	29	11	19	5	35	11	9	22	31

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

—	Male (aged 20 to 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								1	1
91			3		3			2	2
93	3		7		7	3		5	5
95	10	3	5	1	9	2	3	8	11
97	11	4	3	3	10	5	4	6	10
99	4	2	0	0	2	1	0		0
101	1	0	1	1	2		1		1
103		1			1				
Mean	96.8				96.2	96.4			95.6
$\sigma$	$\pm 1.91$				$\pm 2.82$				$\pm 2.34$
$E_m$	$\pm 0.24$				$\pm 0.33$				$\pm 0.29$
V	1.98				2.93				2.45
N	29	10	19	5	34	11	8	22	30

*Frequency Distribution of Width of Forehead (Frontal Minimum)*

Width of forehead in mms.	Beaver	
	Male (20 to 59 years)	Female (20 to 59 years)
94	1	2
97	2	1
100	6	1
103	14	4
106	4	1
109	2	0
112	.....	2
Mean	103.5	103.5
$\sigma$	$\pm 3.26$	.....
$E_m$ .....	$\pm 0.41$	.....
V	3.15	.....
N	29	11

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

Length of face in mms.	Beaver	
	Male (20 to 59 years)	Female (20 to 59 years)
160	.....	2
165	.....	1
170	3	2
175	6	5
180	9	1
185	5	.....
190	5	.....
195	1	.....
Mean	183.0	173.8
$\sigma$	$\pm 6.62$	.....
$E_m$	$\pm 0.83$	.....
V	3.62	.....
N	29	11

*Frequency Distribution of Length of Face (Menton-Nasion)*

Length of face in mms.	Male (aged 20 to 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
104	.....	.....	.....	.....	.....	1	.....	.....	.....
107	.....	.....	.....	.....	.....	0	2	2	4
110	1	.....	.....	.....	.....	1	3	3	6
113	2	.....	1	.....	1	2	2	1	3
116	3	1	2	.....	3	2	2	4	6
119	5	3	1	1	5	1	.....	3	3
122	12	3	3	2	8	3	.....	3	3
125	3	0	1	1	2	1	.....	5	5
128	3	1	4	0	5	.....	.....	0	0
131	.....	3	3	0	6	.....	.....	1	1
134	.....	.....	4	0	4	.....	.....	.....	.....
137	.....	.....	.....	0	0	.....	.....	.....	.....
140	.....	.....	.....	1	1	.....	.....	.....	.....
Mean	121.8	.....	.....	.....	126.3	117.4	.....	.....	117.2
$\sigma$	$\pm 4.35$	.....	.....	.....	$\pm 6.43$	.....	.....	.....	$\pm 6.55$
$E_m$	$\pm 0.55$	.....	.....	.....	$\pm 0.73$	.....	.....	.....	$\pm 0.79$
V	3.57	.....	.....	.....	5.09	.....	.....	.....	5.59
N	29	11	19	5	35	11	9	22	31

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

Index	Male (aged 20 to 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
73	1	.....	1	.....	1	1	.....	.....	.....
76	1	1	0	2	3	2	4	4	8
79	7	2	3	0	5	1	2	6	8
82	9	3	4	2	9	3	2	2	4
85	11	2	5	1	8	3	.....	7	7
88	.....	1	3	.....	4	1	.....	2	2
91	.....	2	3	.....	5	.....	.....	1	1
Mean	82.9	.....	.....	.....	84.5	82.6	.....	.....	82.0
$\sigma$	$\pm 3.10$	.....	.....	.....	$\pm 4.72$	.....	.....	.....	$\pm 4.27$
$E_m$	$\pm 0.39$	.....	.....	.....	$\pm 0.54$	.....	.....	.....	$\pm 0.53$
V	3.74	.....	.....	.....	5.59	.....	.....	.....	5.20
N	29	11	19	5	35	11	8	22	30

*Frequency Distribution of Length of Upper Lip*

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

*Frequency Distribution of Height of Nose*

Height of nose in mms.	Male (aged 20 to 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
44						1	1		1
47	2		1		1	3	4	5	9
50	6	4	2	1	7	3	4	5	9
53	12	5	4	2	11	4		8	8
56	7	2	8	0	10			4	4
59	2		3	2	5				
62			1		1				
Mean	54.1				55.2	50.5			51.5
$\sigma$	$\pm 3.0$				$\pm 3.38$				$\pm 3.24$
$E_m$	$\pm .38$				$\pm 0.39$				$\pm 0.39$
V	5.54				6.12				6.30
N	29	11	19	5	35	11	9	22	31

*Frequency Distribution of Width of Nose*

Width of nose in mms.	Male (aged 20 to 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
31	1								
33	3	2			2	5	4	2	6
35	6	3	2	1	6	3	5	10	15
37	6	2	2	0	4	2		8	8
39	4	4	8	2	14	1		2	2
41	6		6	0	6				
43	3		1	1	2				
45				1	1				
Mean	38.2				39.0	35.2			35.9
$\sigma$	$\pm 3.29$				$\pm 2.76$				$\pm 1.64$
$E_m$	$\pm 0.41$				$\pm 0.32$				$\pm 0.20$
V	8.62				7.08				4.57
N	29	11	19	5	35	11	9	22	31

*Frequency Distribution of Nasal Index*

Index	Male (aged 20 to 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
55	1								
60	6	2	2		4	1		4	4
65	7	3	8	2	13	6	4	7	11
70	7	3	5	0	8	1	2	8	10
75	3	2	3	2	7	2	2	2	4
80	4		1	1	2	0		1	1
85	1					1			
Mean	70.6				70.5	70.1			69.8
$\sigma$	$\pm 7.53$				$\pm 5.50$				$\pm 4.95$
$E_m$	$\pm 0.94$				$\pm 0.64$				$\pm 0.61$
V	10.66				7.79				7.08
N	29	10	19	5	34	11	8	22	30

*Frequency Distribution of Width of Mouth*

Width of mouth in mms.	Beaver	
	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)
48		1
51	1	0
54	3	5
57	8	4
60	11	1
63	5	
66	1	
Mean	60.0	56.4
$\sigma$	$\pm 3.28$	
$E_m$	$\pm 0.41$	
V	5.46	
N	29	11

*Frequency Distribution of Length of Ear*

Length of ear in mms.	Beaver	
	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)
59	4	
62	8	
65	9	
68	2	
71	3	
74	1	
Mean	65.4	
$\sigma$	$\pm 3.92$	
$E_m$	$\pm 0.51$	
V	5.99	
N	27	

*Frequency Distribution of Width of Ear*

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

*Frequency Distribution of Ear Index*

Index	Beaver	
	Male (Aged 20 to 59 years)	Female (aged 20 to 59 years)
49	7	.....
52	7	.....
55	5	.....
58	5	.....
61	2	.....
64	0	.....
67	1	.....
Mean	55.1	.....
$\sigma$	$\pm 4.53$	.....
$E_m$	$\pm 0.59$	.....
V	8.22	.....
N	27	.....

*Frequency Distribution of Length of Hand*

Length of hand in mms.	Beaver	
	Male (aged 20 to 59 years)	Fomale (aged 20 to 59 years)
160	1	1
165	0	2
170	1	2
175	6	4
180	9	1
185	8	1
190	3	.....
195	1	.....
Mean	182.9	173.9
$\sigma$	$\pm 6.83$	.....
$E_m$	$\pm 0.86$	.....
V	3.74	.....
N	29	11

*Frequency Distribution of Width of Hand*

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



*Frequency Distribution of Hand Index*

Index	Beaver	
	Male (aged 20 to 59 years)	Female (aged 20 to 59 years)
43	5	3
45	11	6
47	9	2
49	3	.....
51	1	.....
Mean	46.4	45.0
$\sigma$	$\pm 2.01$	.....
$E_m$	$\pm 0.25$	.....
V	4.32	
N	29	11



PURE BEAVER. OLD MEN (aged 60 years and over)

2	60+	1654	.....	189	154	144	99	124	187	57	37	X	59	65	35	175	86	C	2	2	1	D-M	+	+	+	+	+	+	+	0	Y	M	A	0	1	0
4	60+	1737	.....	191	152	147	100	115	185	56	40	XV	60	64	38	178	82	C	1	0	0	M	+	+	+	+	+	+	+	0	Y	Tn	A	0	1	0
9	60+	1641	.....	183	160	143	95	122	192	55	39	S	53	60	38	188	84	F	1	1	0	D	+	+	+	+	+	+	+	0	Y	M	F	0	1	0
26	65	1737	.....	198	146	143	103	128	185	54	28	S	60	70	39	188	91	C	1	1	0	D	+	+	+	+	+	+	+	0	Y	Tn	F	2	2	0
38	75	.....	.....	189	155	154	104	119	182	55	41	XV	59	71	35	189	87	VC	1	1	0	D	+	+	+	+	+	+	+	0	Y	Tn	A	1	1	0
67	75	1650	.....	199	157	149.5	111	122	180	53	45	V	64	66	36	177	85	M	1	1	0	M	+	+	+	+	+	+	+	0	Y	Tn	F	10	10	0

PURE BEAVER. BOYS

22	10	1410	.....	186	146	133	103	112	162	45	32	V	49	54	32	158	69	C	0	0	0	D	+	+	+	+	+	+	+	1	.....	M	F	0	1	.....
24	10	1404	.....	188	150	134	103	107	169	47	34	S	53	60	34	158	72	F	0	0	0	D	+	+	+	+	+	+	+	1	.....	M	F	0	1	.....
36	18	1748	.....	189	145	139	105	118	169	60	35	S	56	53	37	183	83	C	0	0	0	D	+	+	+	+	+	+	+	0	Y	M	.....	1	0	.....
23	19	1679	.....	182	143	138	104	116	176	52	31	S	52	56	35	172	72	M	0	0	0	D	+	+	+	+	+	+	+	0	.....	Tn	A	0	0	.....

BEAVER-WHITE BREEDS (Beaver  $\frac{1}{2}$ , White  $\frac{1}{2}$ )

11	18	1714	.....	193	147	141	103	116	173	50	39	XV	50	62	31	183	86	F	0	0	0	BL	+	+	+	+	+	+	1	C	M	F	0	0	A
12	45	1663	.....	188	154	153	97	125	193	55	35	S	56	69	37	186	89	F	1	1	0	D	+	+	+	+	+	+	0	Y	M	A	11	2	A
19	65	1752	.....	185	155	155	102	133	198	57	40	X	65	69	37	194	85	C	1	1	0	D	+	+	+	+	+	+	0	D	Tn	F	2	1	A

APPENDIX II  
Particulars of Beaver Women

Serial number	Age	Stature	Sitting height	Head				Nose			Ear		Hand		Hair			Eye			Lip (thickness)	Ear lobe	Teeth		Blood group
				Glabella ad maximum	Bipartetal maximum	Bizygomatic maximum	Frontal minimum	Menton-nasion	Menton-crinion	Length	Width	Shape	Mouth (width)	Length	Width	Upper lip (length)	Length	Width	Head	Moustache			Beard	Cheek	

PURE BEAVER. WOMEN (aged 20 to 59 years)

2	40	1518	.....	181	139	139	95	115	168	55	37	XV	58	.....	170	74	M	.....	.....	.....	D	+	0	0	0	.....	0
3	28	1539	.....	182	152	144	112	110	164	47	37	X	56	.....	171	77	F	.....	.....	.....	D	+	0	0	0	.....	1
4	30	1641	.....	186	146	140	103	113	177	52	36	S	55	.....	179	84	F	.....	.....	.....	D	+	0	0	0	.....	0
7	28	1657	.....	193	144.5	142	106	122	177	57	34	V	57	.....	175	78	M	.....	.....	.....	D	+	0	0	0	.....	0
25	50	1630	832	197	155	146	104	125	179	53	36	V	60	.....	187	84	M	.....	.....	.....	D	+	0	0	0	.....	0
27	55	1527	.....	184	150	145	104	122	179	53	35	S	59	.....	178	80	C	.....	.....	.....	D	+	0	0	0	.....	0
29	45	1590	.....	186	144	136	96	123	179	53	33	S	50	.....	166	73	C	.....	.....	.....	D	+	0	0	0	.....	0
55	55	1504	.....	184	142	142	99	121	172	51	33	V	55	.....	163	76	F	.....	.....	.....	D	+	0	0	0	.....	0
64	48	1539	.....	189	132	148.5	114	116	182	46	40	V	59	.....	182	80	M	.....	.....	.....	D	+	0	0	0	.....	0
68	26	1498	.....	182	145	140	105	118	172	47	33	V	56	.....	167	75	M	.....	.....	.....	D	+	0	0	0	.....	0
70	35	1561	.....	188	150	140.5	100	106	163	51	33	V	55	.....	175	79	M	.....	.....	.....	D	+	0	0	0	.....	0

PURE BEAVER. OLD WOMEN (aged 60 years and over)

9	70	.....	.....	182	149.5	141	101	121	184	55	39	X	58	.....	170	78	M	.....	.....	.....	D	+	0	0	.....	0
67	65	1471	.....	185	149.5	140.5	100	117	177	53	36	V	57	.....	166	71	F	.....	.....	.....	D	+	0	0	.....	0

PURE BEAVER. GIRLS

72	14	1614	.....	187.5	149.5	132	106	120	170	48	36	V	55	.....	173	79	M	.....	.....	.....	D	+	0	0	.....	.....	.....
110	18	1672	856	185	153	139	103	125	184	51	36	XV	52	.....	199	86	C	.....	.....	.....	D	+	0	0	.....	.....	.....

BEAVER-WHITE BREEDS (Beaver 1, White 1)

52	24	1497	.....	180	140	127.5	99	113	156	49	35	S	51	.....	176	73	F	.....	.....	D	=	0	C	Tn	.....	3	1
53	45	1514	.....	190	148	139	100	119	169	50	37	V	57	.....	167	76	F	.....	.....	D	+	0	C	Tn	.....	8	1
54	28	1611	.....	184	147	137	101	122	179	50	34	V	57	.....	180	80	F	.....	.....	D	+	0	C	M	.....	11	3

(Beaver 1, White 1)

62	26	1851	.....	185	146	138	104	118	177	53	35	X	55	.....	180	82	M	.....	.....	D	+	0	C	Tn	.....	10	0
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APPENDIX IV  
Particulars of Sekani Indians

Serial number	Head		Face		Nose		Stature		Hair		Eye		Beard			Lip (thickness)		Index	
	Length	Breadth	Length	Breadth	Length	Breadth	Length	Breadth	Shape	Colour	Colour	Fold	Upper cheek	Lower cheek	Chin	Cephalic	Facial	Nasal	Cephalo-facial

SEKANI. MEN

75	196	152	144	122	51	37.5	1668	St.	Bl.	D	0	0	0	1	Med.	77.5	84.7	73.5	94.7
76	193	153	148	119	50	37	1731	St.	Bl.	D	0	0	0	2	Med.	79.2	80.4	74.0	96.7
80	186	152	151	117	55	36	1762	St.	Bl.	M	0	0	0	1	Med.	81.7	77.4	65.4	99.3
86	192	155	150	130	58	40	1744	Sl. wave	Bl.	D	0	0	0	1	Med.	80.7	86.6	68.9	96.7
87	201	148	146	119	?	35	1653	Low wave	Bl.	D	0	0	0	0	Med.	77.4	81.5	61.4	98.6
89	189	149	145	133	55	36	1689	Low wave	Bl.	D	0	0	0	1	Med.	78.8	91.7	65.4	97.3
92	192	151	145	119	51	40	1719	Med. wave	Bl.	D	0	0	0	1	Med.	78.6	82.0	78.4	96.0
96	184	148	144	132	53	39	1697	Low wave	Bl.	M	0	0	0	1	Med.	80.4	91.6	73.5	97.3
98	197	149	153	123	52	40	1678	Low wave	Bl.	M	0	0	0	1	Med.	75.6	80.3	76.9	102.6
99	184	152	146	122	54	34	1681	Low wave	Bl.	M	0	0	1	2	Med.	82.6	83.5	62.9	96.0
100	190	151	148	131	53	34	1666	Med. wave	Bl.	M	0	1	1	2	Med.	79.5	83.5	64.1	98.0

SEKANI. OLD MEN

73	190	152	152	129	57	41.5	1715	St.	Bl.	D	0	0	0	2	Med.	80.0	84.8	72.8	100.0
74	185	150	149	121	50	40	1671	St.	Bl.	M	0	0	0	1	Med.	81.0	81.2	80.0	99.3
78	193	150	155	118	50	37	1636	Low wave	Bl.	M	0	1	1	1	Med.	77.7	76.1	74.0	103.3

SEKANI. WOMEN

82	193	147	144	112	46	35	1617	Low wave	Bl.	D	0	.....	.....	.....	Med.	76.1	77.7	76.0	97.9
83	200	148	144	110	52	36	1586	Low wave	Bl.	M	0	.....	.....	.....	Med.	81.3	76.3	69.2	97.3
84	202	145	141	107	49	33.5	1489	Low wave	Bl.	D	0	.....	.....	.....	Med.	77.5	75.8	68.3	97.2
85	178	146	138	116	52	34	1569	Low wave	Bl.	D	0	.....	.....	.....	Med.	82.0	84.0	65.3	94.5
90	181	145	140	115	47	34	1560	Low wave	Bl.	D	0	.....	.....	.....	Med.	80.1	82.1	72.3	96.5
91	186	145	139	112	49	36	1582	Low wave	Bl.	D	marked fold	.....	.....	.....	Med.	77.9	80.5	73.4	95.8
93	178	147	148	113	52	34	1644	Light wave	Bl.	D	0	.....	.....	.....	Med.	82.5	76.3	65.3	100.6
97	186	146	138	109	48	36	1562	Low wave	Bl.	D	0	.....	.....	.....	Med.	78.4	78.9	75.0	94.5
101	191	147	142	118	50	36	1630	Low wave	Bl.	D	0	.....	.....	.....	Med.	77.0	83.1	72.0	96.6

SEKANI. OLD WOMEN

94	187	149	145	113	51	40.5	1545	Low wave	Bl.	D	Trace	.....	.....	.....	Med.	79.6	77.9	79.4	97.3
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APPENDIX V  
Particulars of Eastern Carrier. Men

Serial number	Age	Head		Face		Nose		Stature	Hair		Eye		Beard			Lip (thickness)	Index		
		Length	Breadth	Breadth	Length	Length	Breadth		Shape	Colour	Colour	Fold	Upper cheek	Lower cheek	Chin		Cephalic	Facial	Nasal

EASTERN CARRIER. MEN

7	22	191	151	141	118	50	39.5	1690	St.	Bl.	D	0	0	0	Med.	79.0	83.7	79.0	93.3
27	26	192	153	147	118	54	39	1660	St.	Bl.	M	0	0	0	Med.	79.6	80.2	79.6	96.0
36	39	191	151	137	123	57	36	1624	St.	Bl.	M	0	0	0	Med.	79.0	89.7	79.0	98.0
37	47	191	151	148	128	55	37.5	1730	St.	Bl.	M	0	0	0.5	Med.	79.0	86.4	79.0	98.0
38	?	189	156	147	119	49	40	1735	St.	Bl.	D	0	0	2	Med.	82.5	80.9	82.5	94.2
39	?	194	154	149	128	52	35	1745	St.	Bl.	D	0	0	2	Med.	79.3	85.9	79.3	96.7
40	22	186	159	149	129	56	38	1759	St.	Bl.	D	0	0	1	Med.	85.4	86.5	85.4	93.7
41	50	194	164	159	134	61	40.5	1653	St.	Bl.	M	0	0	1	Lower rather thick	84.5	84.2	84.5	96.9
42	30	199	165	157	134	64	39.5	1721	St.	Bl.	D	0	0	1	Med.	82.9	85.3	82.9	95.1
46	20	196	166	154	123	56	44	1707	St.	Bl.	D	0	0	1	Med.	84.6	79.8	84.6	92.7
51	50	188	154	148	135	58	41	1711	St.	Bl.	L	0	0	2	Med.	81.9	91.2	81.9	96.1
52	30	183	157	145	123	57	39.5	1732	St.	Bl.	M	0	0	2	Med.	85.7	84.8	85.7	92.3
56	45	193	158	159	130	57	38.5	1775	St.	Bl.	M	0	0	0	Med.	81.8	81.7	81.8	100.6
58	24	183	159	148	136	58	41	1741	St.	Bl.	D	Trace	0	0	Med.	86.8	91.8	86.8	93.0
59	21	187	153	143	126	54	39	1675	St.	Bl.	D	0	0	0	Med.	81.3	88.1	81.3	93.4
60	40	195	156	148	133	58	41	1721	St.	Bl.	D	0	0	2	Med.	80.0	89.8	80.0	94.8
61	32	189	158	144	131	60	40	1683	St.	Bl.	D	0	0	1	Med.	83.5	90.9	83.5	91.1
70	50	186	160	151	114	54	42	1672	St.	Bl.	M	0	0	1	Med.	86.0	75.4	86.0	94.3
72	32	198	165	156	131	60	41	1679	St.	Bl.	M	0	0	0	Med.	83.3	83.9	83.3	94.5

EASTERN CARRIER. OLD MEN

23	70	191	157	146	123	53	41.5	1621	St.	Bl.	D	0	1	2	Med.	82.2	84.2	82.2	92.9
47	65	194	156	154	128	56	37	1621	St.	Bl.	L	0	0.5	2	Med.	80.4	83.1	80.4	98.7
55	75	190	152	153	124	56	50	1632	St.	Turning white	L.	0	0	1	Upper med., lower thick	80.0	81.0	80.0	100.6
63	75	195	164	158	137	62	39	1659	St.	Bl.	D	Trace	0	0.5	Med.	84.1	86.7	84.1	96.3

APPENDIX VI  
Particulars of Eastern Carrier. Women

Serial number	Head		Face		Nose		Stature	Hair		Eye		Lip (thickness)			Index		
	Length	Breadth	Breadth	Length	Length	Breadth		Shape	Colour	Colour	Colour	Fold	Cephalic	Facial	Nasal	Cephalo-facial	

## EASTERN CARRIER. WOMEN

29	181	151	140	116	49	36	1604	St.	Bl.	D	0	Med.	83.4	82.8	73.4	92.7
30	179	154	147	125	54	36	1554	St.	Bl.	D	0	Med.	86.0	85.0	66.6	95.4
31	182	150	138	122	55	37	1629	St.	Bl.	D	0	Med.	82.4	88.4	67.2	92.0
33	175	156	148	118	52.5	36	1623	St.	Bl.	D	0	Med.	89.1	79.7	68.5	94.8
34	183	143	139	121	56	34.5	?	St.	Bl.	M	0	Med.	78.1	87.0	61.6	97.2
35	187	153	146	111	47	36	1566	St.	Bl.	M	0	Med.	81.8	76.0	76.5	95.4
43	194	160	155	121	54.5	33	1575	St.	Bl.	M	0	Med.	82.4	78.0	69.7	96.8
45	187	153	147	126	57	40	1555	St.	Bl.	M	0	Med.	81.8	85.7	70.1	96.0
48	187	148	143	109	47	39	1612	St.	Bl.	M	Trace	Med.	79.1	76.2	80.1	96.6
49	181	147	140	111	50	36	1562	St.	Bl.	D	0	Med.	81.2	79.2	72.0	93.2
53	182	158	147	117	51	37.5	1606	St.	Bl.	M	0	Med.	86.8	79.5	73.5	93.0
54	185	158	147	115	49	37.5	1608	St.	Bl.	M	Trace	Med.	85.4	78.2	76.3	93.0
62	194	155	147	126	55	38	1591	St.	Bl.	D	0	Med.	79.8	85.7	69.0	94.8
64	188	152	148	125	54	34.5	1619	St.	Bl.	D	0	Med.	80.8	84.4	63.8	97.3
65	191	148	143	123	51	36.5	1596	Low wave	Bl.	D	0	Med.	77.4	86.0	71.5	96.6
66	178	149	133	121	52	35	1636	St.	Bl.	D	0	Med.	83.7	90.9	67.3	89.2
67	185	150	136	109	48	33.5	1541	St.	Bl.	D	Trace	Med.	81.0	80.1	69.7	90.6
68	187	155	147	117	54	36.5	1555	St.	Bl.	M	0	Med.	82.8	79.5	67.5	94.8
69	188	162	153	131	58	35.5	1584	St.	Bl.	D	0	Med.	86.1	85.6	61.2	94.4
71	180	153	144	122	55	38	1527	Low wave	Bl.	D	0	Med.	85.0	84.7	69.0	94.1
79	184	152	145	127	57	34	1592	Low wave	Bl.	D	0	Med.	82.6	87.5	59.6	95.3
88	186	146	141	111	50	36	1592	Low wave	Bl.	D	0	Med.	78.4	78.7	72.0	96.5

## EASTERN CARRIER. OLD WOMEN

18	183	152	142	106	51	38	1527	St.	White	D	0	Med.	83.1	74.6	74.5	93.4
50	187	152	150	123	57	36.5	1550	St.	Bl.	M	0	Med.	81.2	82.0	64.0	98.6

APPENDIX VII  
Particulars of Western Carrier

Serial number	Age	Head		Face		Nose		Stature	Hair		Eye		Beard			Lip (thickness)			Index		
		Length	Breadth	Breadth	Length	Length	Breadth		Shape	Colour	Colour	Colour	Fold	Upper cheek	Lower cheek	Chin	Cephalic	Facial	Nasal	Cephalo-facial	

WESTERN CARRIER. MEN

1	44	190	154	150	125	59	39.5	1665	St.	Bl.	D Br.	0	1/4	0	1	Med.	81.1	83.3	66.9	97.4
2	40	188	162	156	119	52	43	1632	St.	Bl.	D Br.	0	0	0	1/4	Med.	86.2	76.3	82.7	96.3
10	35	193	151	146	122	53	35	1562	St.	Bl.	D	0	0	0	Med.	78.2	83.6	66.0	96.6	
16	?	194	156	159	124	53	40	1631	St.	White	L	0	0	1	Med.	80.4	77.9	75.4	101.9	
57	49	204	167	162	141	60	46	1757	St.	Bl.	L	0	1	1	Med.	81.8	87.0	76.6	97.0	

WESTERN CARRIER. OLD MEN

4	65	188	163	159	121	55	40	1675	St.	Bl.	M	0	0	0	1	Med.	86.7	76.1	72.7	97.5
5	60	186	156	152	137	56	40.5	1734	St.	Turning grey	M	Trace	1	1	Med.	83.9	90.1	72.3	97.4	
6	65	187	160	158	132	53	44	1626	St.	Bl.	M	0	1/4	2	Med.	85.5	83.5	83.0	98.75	
11	60+	192	164	157	117	51	44	1651	St.	Bl.	M	0	0	1	Med.	85.4	74.5	86.3	95.7	
19	75	191	163	158	126	56	47	1701	St.	Bl.	(Blind)	0	1	2	Med.	85.3	79.7	83.9	96.9	
24	70+	199	164	159	133	54	42	1714	St.	Bl.	M	0	0	2	Med.	82.4	83.6	77.7	96.9	
25	63	206	161	153	133	61	44	1623	St.	Bl.	D	0	0	1	Med.	78.1	86.9	72.1	95.0	

WESTERN CARRIER. OLD WOMEN

3	60	180	142	136	110	45	35	1504	St.	Bl.	?	0	.....	.....	.....	Med.	78.9	80.9	77.8	95.7
17	60	173	151	149	113	52	40	1565	St.	Bl.	D	0	.....	.....	.....	Med.	87.3	75.8	76.9	98.6

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 310

LECTURE 1

MECHANICS

1.1 Kinematics

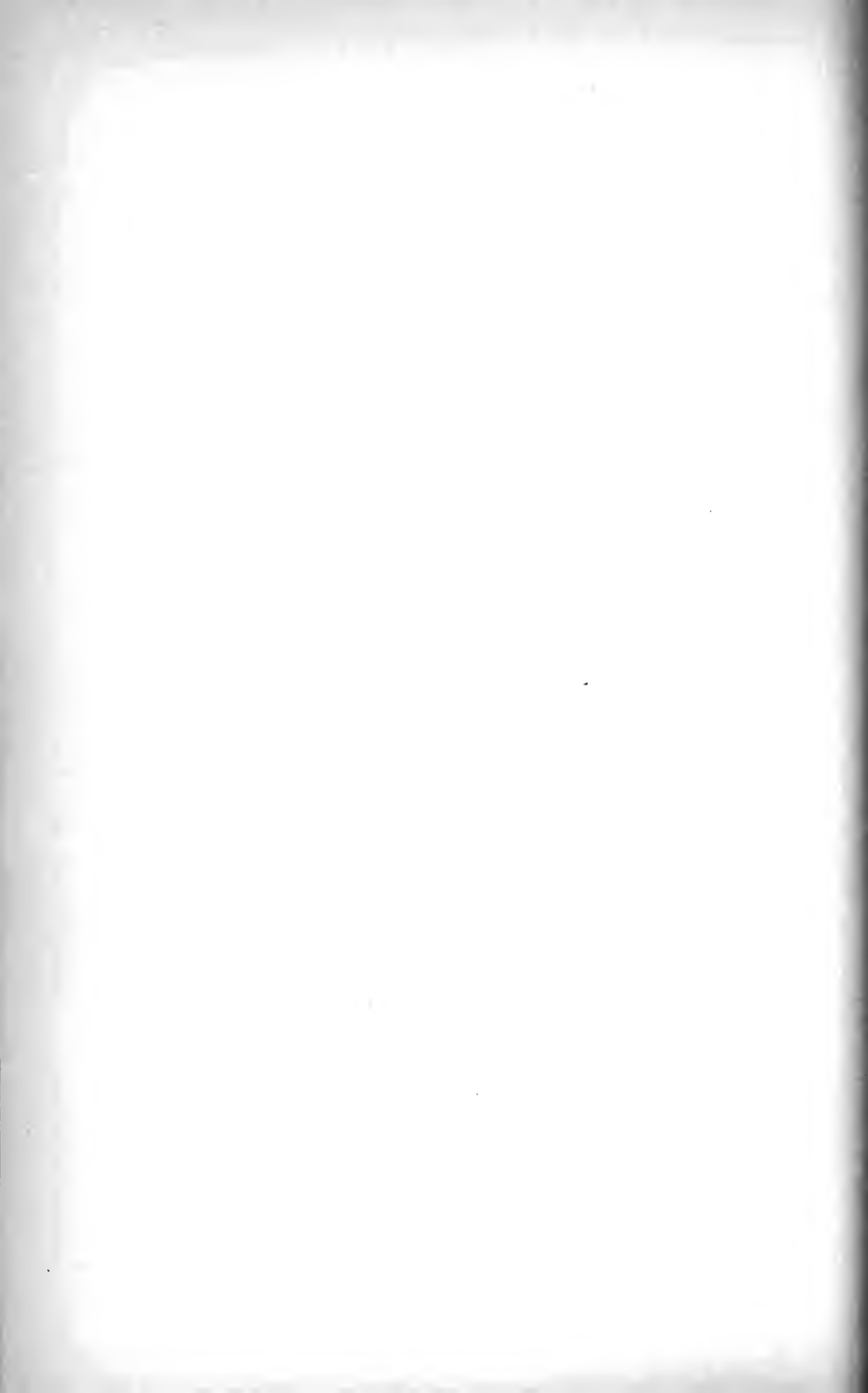
1.2 Dynamics







Beaver Indians at St. John







Beaver Indians at St. John





Beaver Indians at St. John





Beaver Indians at Hudson Hope





Beaver Indians at Hudson Hope







Beaver Indians at Hudson Hope





