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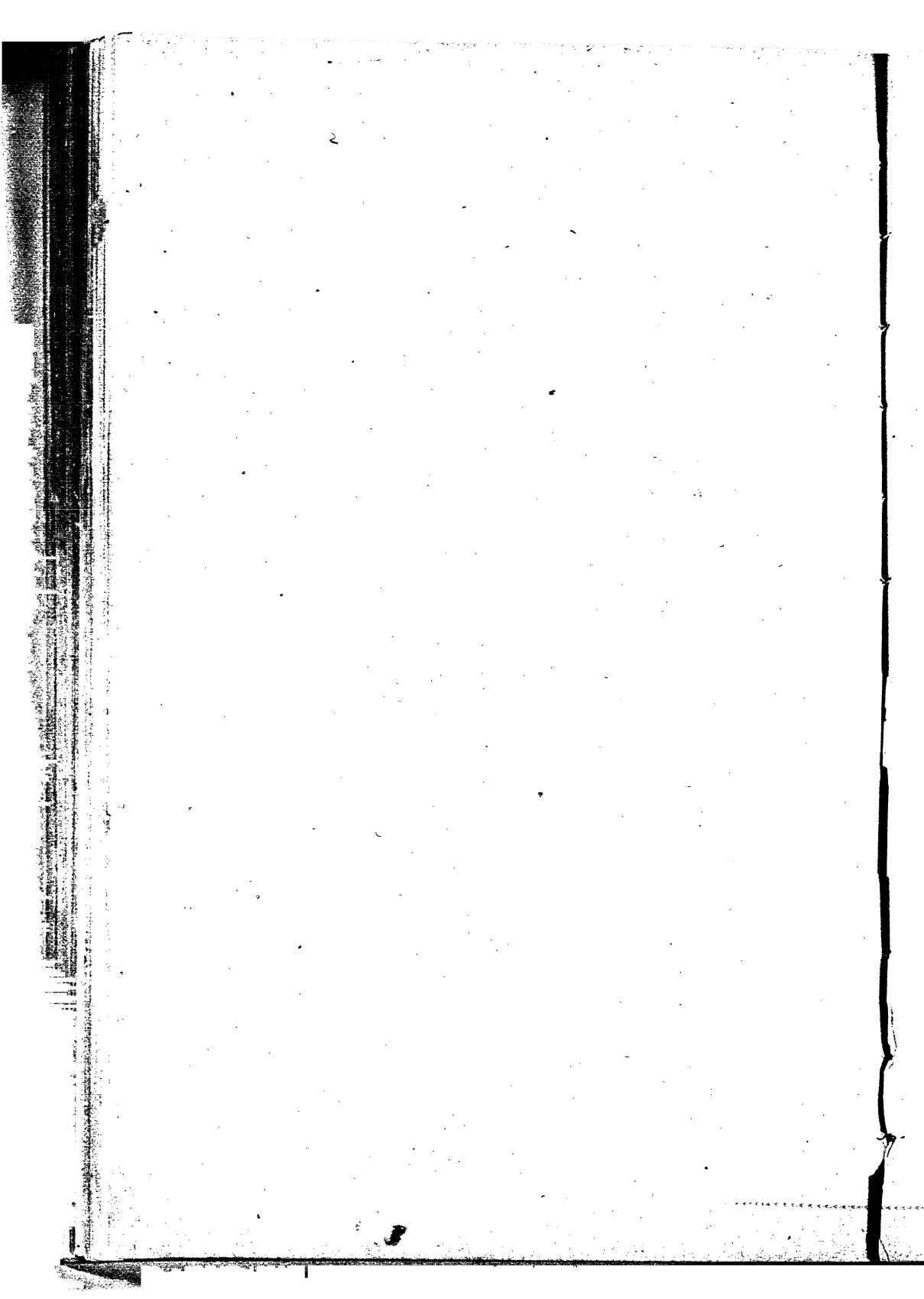
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British Association for the Advancement of Science

CARDIFF MEETING, 1891

SEVENTH REPORT

ON THE

NORTH-WESTERN TRIBES OF CANADA

LONDON

OFFICES OF THE ASSOCIATION

BURLINGTON HOUSE



## British Association for the Advancement of Science.

*Seventh Report of the Committee, consisting of Dr. E. B. TYLOR, Mr. G. W. BLOXAM, Sir DANIEL WILSON, Dr. G. M. DAWSON, and Mr. R. G. HALIBURTON, appointed to investigate the physical characters, languages, and industrial and social condition of the North-Western Tribes of the Dominion of Canada.*

INTRODUCTION BY SIR DANIEL WILSON.

THE report here presented is again the result of the work of Dr. Franz Boas in the interesting ethnological field of British Columbia. It consists of two parts, the first being devoted to the Bilqula, a people inhabiting a limited tract in the vicinity of Dean Inlet and Bentinck Arms, the second dealing with the physical characteristics of the tribes of the North-west Coast region.

In connection with the Bilqula it is important to note that they, by reason of their position, have held the most important natural pass and trade route through the Coast Range, from the ocean to the interior, which exists between the Skeena River and the Fraser, a distance exceeding 400 miles. This circumstance has rendered their situation a peculiarly favourable one in some respects. It has induced them to engage in intertribal trade, and evidently also affords a clue to some of the peculiarities which Dr. Boas points out. From time immemorial, as the writer is informed by Dr. Dawson, who has geologically examined that part of the country, a route has been beaten out by way of the Bella Coola River, thence northward to the Salmon River, and then along the north side of the Blackwater River to the Upper Fraser. This is commonly known by the Tinneh of the interior as the 'Grease Trail,' from the fact that the chief article of value received from the coast in early times was the oil of the olachen or candle-fish, though dentalium shells and other things were also brought in. When trading vessels began to visit the coast, besides the natural products of the sea, iron and various kinds of manufactured goods found their way into the interior by the same route; while the fine furs of the inland region were carried back to the coast and sold to the vessels. It was by this same route, well known to the natives, that Sir Alexander Mackenzie was enabled to complete the first traverse of the North American continent from sea to sea and to reach

the shore of the Pacific in 1793. As a result of this intercommunication between the Bilqula and Tinneh it is found that houses essentially similar to those of the Coast Indians in mode of construction and ornamentation, though smaller and less skilfully built, occur far inland on the upper waters of the Salmon and Blackwater Rivers; while, on the other hand, the practical identity of some points in the mythology of the Bilqula with that of the Tinneh of the interior is a clear instance of reciprocal influence.

The second part of the report will be found to contain the most complete series thus far obtained of anthropological measurements relating to the tribes of the North-West Coast, with a discussion by the author of the data which these afford, in which several points of value are brought out and important suggestions are made for further inquiry. In this connection it must be mentioned that the committee are much indebted to the courteous and enlightened liberality of Major J. W. Powell, Director of the U.S. Bureau of Ethnology, who has permitted Dr. Boas to incorporate with the measurements obtained in British Columbia those made by him in Washington and Oregon under Major Powell's directions. It has thus been possible for Dr. Boas to give to his treatment of this subject a comprehensive character, which could not otherwise have been obtained, by enlarging the scope of his discussion so as to include the more or less intimately related tribes of the Pacific States with those of the Province of British Columbia itself.

*Third Report on the Indians of British Columbia.*

By Dr. FRANZ BOAS.

The following alphabet has been used in the report:—

The vowels have their continental sounds, namely: *a*, as in *father*; *e*, like *a* in *mate*; *i*, as in *machine*; *o*, as in *note*; *u*, as in *rule*.

In addition the following are used: *ä*, *ö*, as in German; *â*=*aw* in *law*; *æ*=*e* in *flower* (Lepsius's *e*).

Among the consonants the following additional letters have been used: *g*, a very guttural *g*, similar to *gr*; *k*, a very guttural *k*, similar to *kr*; *q*, the German *ch* in *bach*; *h*, the German *ch* in *ich*; *ç*, between *q* and *h*; *c*=*sh* in *shore*; *ç*, as *th* in *thin*; *tl*, an explosive *l*; *dl*, a palatal *l*, pronounced with the back of the tongue (dorso-apical).

## THE BILQULA.

The Bilqula, who are generally called Bella Coola, are the most northern tribe belonging to the Salish family. They are separated from the tribes speaking allied languages by the Chilcotin (of the Tinneh stock) in the interior, and on the coast by the Kwakiutl. Their language is—considered grammatically—more closely related to the dialects of the Coast Salish than to those of the tribes of the interior. A number of terms referring to the sea and sea-animals are the same in Bilqula and in the dialects of the Gulf of Georgia; so that we may safely assume that the two groups of tribes were at one time closely related, and that the Bilqula were differentiated from this group. They inhabit the coasts of Bentinck Arm and Dean Inlet, as shown on the map accompanying the sixth report of the committee, and extend far up Bella Coola River. Since the end of last century they

have dwindled down in numbers, and a few only of their once populous villages are still inhabited, namely, Sātsq, at the head of Dean Inlet; Nūtl'ē'l, at the mouth of Salmon River; Nuqa'lkH (which embraces five villages, at the mouth of Bella Coola River; Stū'ih, twenty-eight miles up Bella Coola River; and Tā'lio, at the head of South Bentinck Arm. The dialect of Nūtl'ē'l and Sātsq differs slightly from that of the other villages. The following is a list of their ancient villages, most of which are still inhabited at certain seasons, although not regularly :—

1. Sātsq.
2. Nūtl'ē'l. The tribe of this place is called SōtslēmH.
3. Nuqa'lkH, embracing the villages K'ōmkō'tēs and Stskē'etl on the north side, Pē'isēla and Nuthē'ih'tskōnē on the south side of the river.
4. Sēnqtl.
5. Tsōmō'otl.
6. Snū't'elē.
7. Nū'khits.
8. Asē'nanē.
9. Nuk'ā'aqmats.
10. Təqoqk'ā'nē.
11. Nū'sk'elst.
12. Nūtlē'iq.
13. Stū'ih, twenty-eight miles from the sea.
14. Snū't'elatl. Nos. 4 to 14 are situated along Bella Coola River, and are given as they are met with in ascending the river.
15. Slā'aqtl, at the confluence of Bella Coola and Driver (?) Rivers.
16. Tā'liō, at the head of South Bentinck Arm, embracing K'oa'pə, Tā'lio, Nū'ik', A'sēq.
17. K'oa'tlna, at the bay of that name in the southern entrance of Bentinck Arm. On the north entrance of Bentinck Arm were the Kiltē'itl, but it is doubtful whether they belonged to the Bilqula or to the Hē'iltuk. The latter call the people of Dean Inlet Kīmknitq.

Each of these tribes is subdivided into gentes, which appear to be arranged in exogamic groups. I learnt the names of the following gentes, which bear the names of their ancestors :—

Gentes of the Nuqa'lkH :

1. Tok'oa'is (=looking down on his family).
2. Spuqpnqō'lēmQ; Qē'mtsioa name: Mā'lakyilatl (see p. 9).
3. Siatlqēlā'aq.
4. Kē'ltāqk'aua.
5. Pō'tlas.

Gentes of the Nusk'ē'lstēmH :

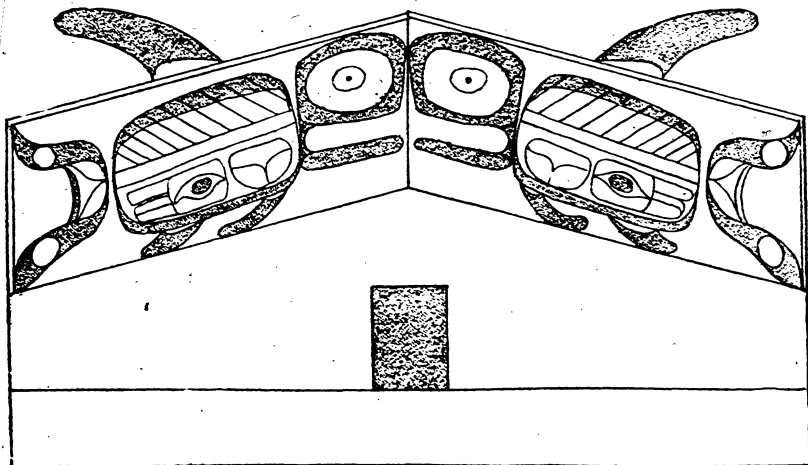
1. Tl'ak'aumō'ot.
2. K'ōoqōtlā'nē.
3. ?

Gentes of the Tālio'mH :

1. Ialo'stimōt (=making good fire); Qē'mtsioa name; Tā't'Entsāit (=a cave protecting from rain).
2. Spatsā'tlt.
3. Tumqoa'akyas.
4. Ha'mtsit

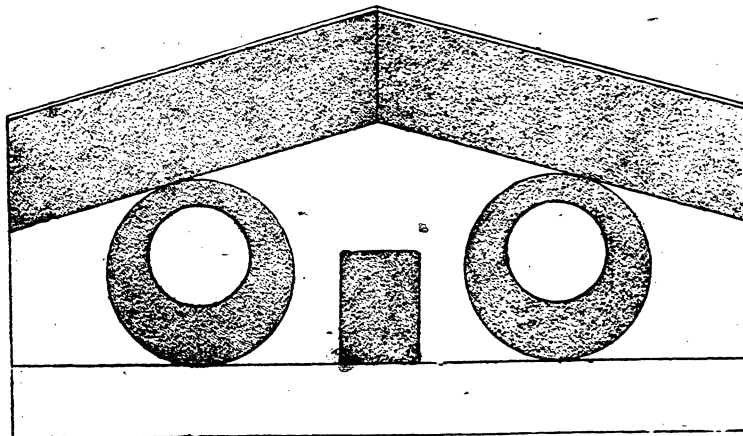
The evidence which I can present regarding the laws of intermarriage is the following: I inquired of Nusk'eln'sta (=cold water in face), a member of the Ialo'stimöt gens, whether he might marry a Spatsä'tlt woman; this suggestion he rejected with the greatest indignation.

FIG. 1.—House-front of the gens Tok'oä'is.



Members of the first two gentes, he explained later on, are not allowed to intermarry, neither are members of the last two gentes, while the first and second may marry among the third and fourth. He accounted for

FIG. 2.—House-front of the gens Tl'ak'aumö'ot, representing the moon.



this by stating that Ialo'stimöt's son married Spatsä'tlt's daughter, and that consequently the two gentes were related to each other.

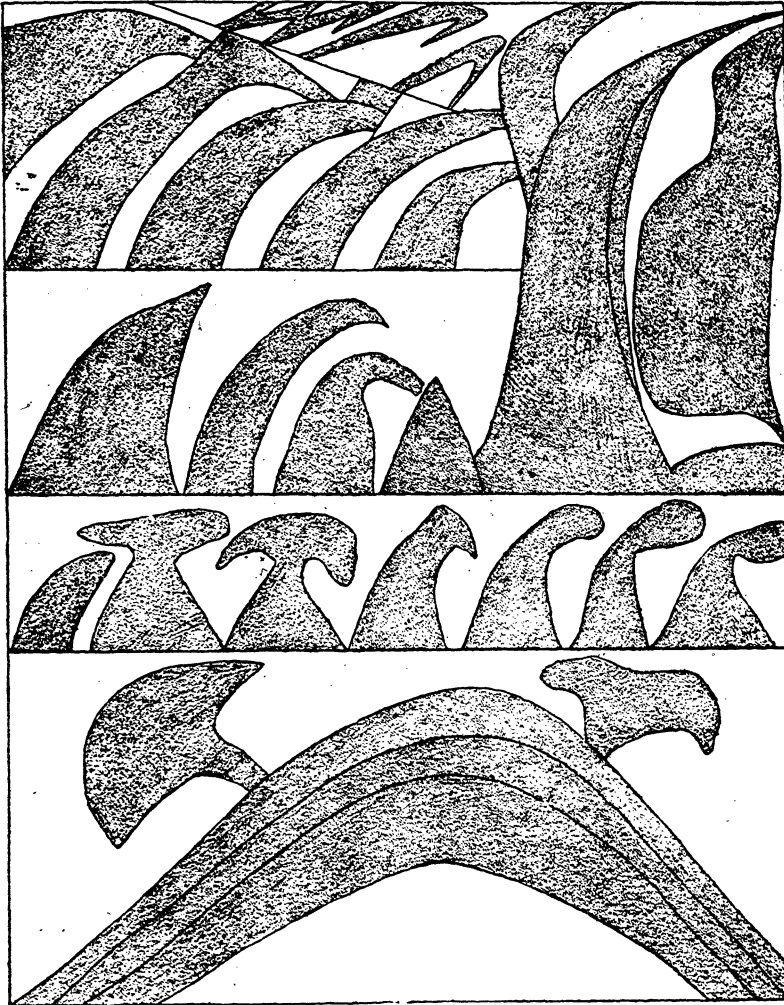
The gentes have crests similar to those of the neighbouring coast



tribes. The crest is represented in paintings on the house-front and on dancing implements.

The gens Tök'oa'is has a killer-whale (*Delphinus orca*) painted on the house-front (fig. 1). The tradition says that the ancestor of this gens

FIG. 3.—Crest of the gens Smó'en, showing the mountain Suwá'kHH, with two clouds near its summit; above a mackerel sky.



one day, when hunting in the mountains, found a house on which a killer was painted. The chief who lived in the house invited him and presented him with his crest for himself and for his descendants. The crest consists of the killer-whale, eagle, swan, and heron.

The crests of all gentes were obtained in like manner.

The gens Spatsā'tlt have breakers painted on the house-front, and use in dances the mask of a large kind of whale (*k'ents*), of the crow, and of the black bear.

The gens Tumqoā'akyas use the mask of Ōnēstisitō'ma (=the sleeper) and the eagle.

The gens Tl'ak'aumō'ot of the Nusk'ē'lstēm use the moon (fig. 2).

The gens Ialo'stimōt of the Tālio'm use the raven, robin (*aitt'a'qonē*), eagle, whale, the bird *t'ēntlala* (genus?), and *s'atlsū'ots*, the flood-tide. They have sun, moon, and stars painted on the house-front, and the *nusqē'mta* suspended from the beams of the roof (see p. 14).

The highest gens of Nūtl'ē'l has the name Smō'en (=the north wind). He has the mountain Suwā'kHH surmounted by a mackerel sky, and with clouds on its sides, painted on his house-front (fig. 3). Another object belonging to his crest represents waves.

The children belong to the gens of either father or mother, the decision being left to the choice of the parents.

#### SECRET SOCIETIES AND THE POTLATCH.

The social organisation, festivals, and secret societies of the Bilqula are still more closely interrelated than they are among the Kwakiutl, and must be considered in connection. We have to describe here the potlatch, the Sisau'kH, and the Kū'siūt. The Sisau'kH corresponds to the Tlōola'qa of the northern Kwakiutl tribes, the Kū'siūt to the Ts'ētsā'ēk'a. The Bilqula believe that the potlatch has been instituted by ten deities, nine brothers and one sister, the foremost among whom is Qē'mtsiōa, to whose care the sunrise is intrusted. He resides with the others in a beautiful

FIG. 4.—Mask representing Qē'mtsiōa.

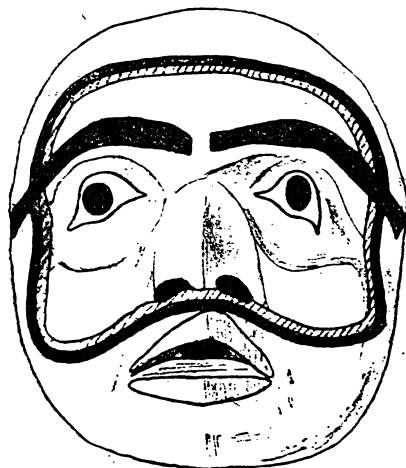
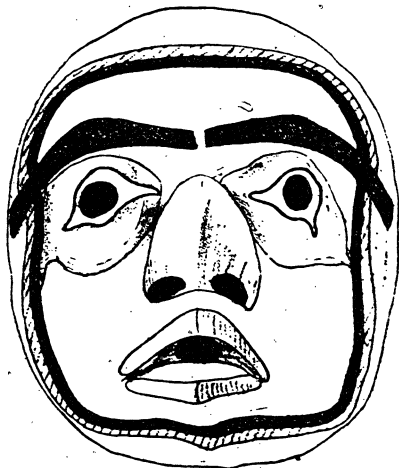


FIG. 5.—Mask representing Qemqemalá'otla.



house in the far east, and cries ō! ō! every morning when the sun rises. He has to take care that the sun rises properly. The first six of these deities

are grouped in pairs, and are believed to paint their faces with designs representing moon, stars, and rainbow. In the Kū'siūt these deities make their appearance, and are represented by masks which I have copied. Qē'mtsioa and Qēmqēmalá'otla wear the design of the full moon, indicated in the mask Qē'mtsioa (fig. 4) by a double curved line in red and black, the black outside, passing over forehead, cheeks, and upper lip. Qēmqēmalá'otla has a double curved line in red and black, the red outside, which passes over forehead, cheeks, and chin (fig. 5). Aiumki'likya (fig. 6) and Aiumalá'otla (fig. 7) wear the design of the crescent, drawn

FIG. 6.—Mask representing Aiumki'likya.

FIG. 7.—Mask representing Aiumalá'otla.



in red and black, with differences similar to those between the first and second. The fifth, K'ōmk'ōmki'likya, and K'ō'mtsioa have designs representing stars (fig. 8), both wearing the same style of mask. The seventh is K'ula'qawa, whose face represents the blossom of a salmonberry bush (fig. 9). The next in order, Kulé'lias (=who wants to have blankets first), wears the design of the rainbow in black and blue (fig. 10). The ninth, At'amá'k wears on the head a mask representing a kingfisher, and is clothed in a birdskin blanket. The last of the series is a woman called Tl'ětsá'aplētlāua (=the eater), the sister of all the others. Her face is painted with a bladder filled with grease (fig. 11). She figures in several legends as stealing provisions and pursued by the people whom she has robbed.

The Sisan'kH, which is danced at potlatches and other-festivals of gentes, is presided over by a being that lives in the sun. A man who had gone out hunting met the Sisan'kH, and was instructed by him in the secrets of the dance. When he returned he asked the people to clean their houses, and to strew them with clean sand, before he consented to enter. Then he danced the Sisan'kH, and told the people what he had seen. He said that the being had commanded them to perform this dance and to adorn themselves when dancing with carved headdresses with

trails of ermine skins, and to swing carved rattles. The man, later on, returned to the sun. Ever since that time the Bilqula dance the Sisau'ku. Besides this it is stated that the Raven gave each gens its secrets.

FIG. 8.—Mask representing  
K'omk'omki'lika.

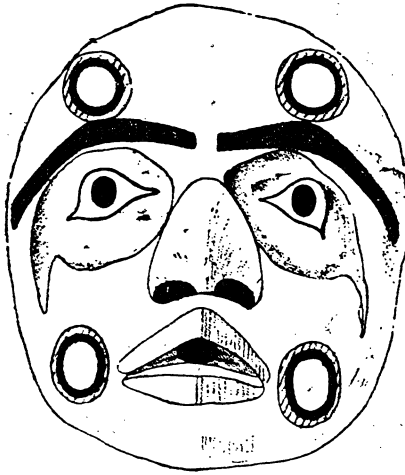


FIG. 9.—Mask representing  
K'ula'qawa.



Each gens has its peculiar carvings, which are used in the Sisau'ku only, and are otherwise kept a deep secret, *i.e.*, they are the sacred posses-

FIG. 10.—Mask representing Kule'lias.

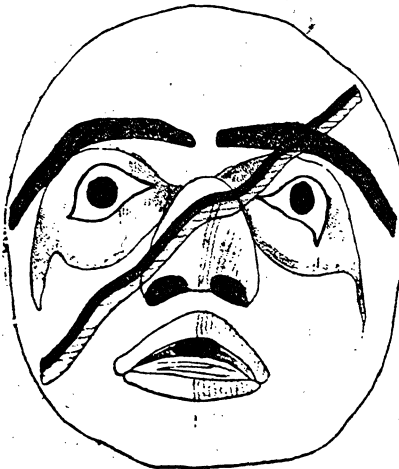
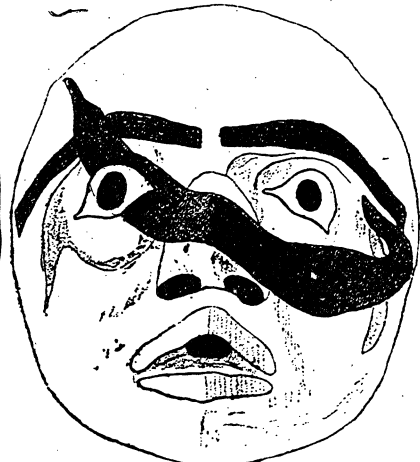


FIG. 11.—Mask representing  
Tl'etsa'apletlana.



sions of each gens. All gents, however, wear the beautiful carved headdresses and use the raven rattles, regardless of the carving they

represent. Every time the sacred objects of a gens are shown to the people a potlatch is given. The sacred objects, although the property of the various gentes, must nevertheless be acquired by each individual. That is to say, every free person has the right to acquire a certain group of carvings and names, according to the gens to which he or she belongs. Slaves and slaves' children, also illegitimate children, could not become Sisau'kH. A person cannot take a new carving, but must wait until it is given to him by his relatives—father, mother, or elder brother. Nusk'elusta, to whom I owe my information regarding the gentes, and who is a member of the gens Ialo'stimöt of the Talio'mH, stated that he had received the raven when he gave his first potlatch. At his second potlatch he received the eagle. He hopes that his mother will give him the whale at his next potlatch, and will at the same time divulge to him the secrets connected with it. In course of time, he said, he might get even others from his brother; but if the latter's children should prove to be very good, and develop very rapidly, his brother would probably give his secrets to his children. At festivals, when a person acquires a new secret, he changes his name. Each person has two names, a Kū'siūt name, which remains the same throughout life; and a Qē'mtsioa name, which is changed at these festivals. Thus, Nusk'elusta's (which is his Kū'siūt name) present Qē'mtsioa name is Atl'itlēmne'lus'aiH, but at his next potlatch he intends to take the name of Kaliā'kis. These names are also the property of the various gentes, each gens having its own names. In the list of gentes given above, the names enumerated are the Kū'siūt names of the ancestors. In two cases only the Qē'mtsioa names have been ascertained (see p. 3). When a man possesses several Sisau'kH secrets he will distribute them among his children. When a girl marries, her father or mother may, after a child has been born to her, give one or several of their Sisau'kH secrets to her husband, as his children make him a member of the gens. When a person gets to be old he gives away all his Sisau'kH secrets. After any secret has been given away the giver must not use it any more. The crest and the Sisau'kH carvings must not be loaned to others, but each person must keep his own carvings. The only exceptions are the carved headdresses and the raven rattles, which are not the property of any particular gens.

The laws regarding the potlatch are similar to those of the Kwakiutl. The receiver of a present becomes the debtor of the person who gave the potlatch. If the latter should die the debts become due to his heirs. If the debtor should die his heirs become responsible for the debt. Property is also destroyed at potlatches. This is not returned, and serves only to enhance the social position of the individual who performed this act. It is not necessary that all the property given by a person in a potlatch should be owned by him. He may borrow part of it from his friends, and has to repay it with interest. I was told, for instance, that a man borrowed a large copper-plate and burnt it at a potlatch. When doing so he had to name the price which he was going to pay to the owner in its stead. Since that feast he died, and his heirs are now responsible for the amount named at the potlatch.

The Kū'siūt is presided over by a female spirit, called Anaulikūtsai'H. Her abode is a cave in the woods, which she keeps shut from February till October, remaining all the while inside. In October she opens the door of her cave and sits in front of it. A womau is said to have been the first to find her. Anaulikūtsai'H invited her into her cave and taught

her the secrets of the Kū'siūt. She wore ornaments of red cedar-bark around her head, wrists, and ankles; her face was blackened, her hair strewn with eagle-down. She commanded the woman to dance in the same way as she saw her dancing. The people should accompany her dance with songs, and, after she had finished, they should dance with masks. She said, 'Whenever a person sees me your people shall dance the Kū'siūt. If you do not do so I shall punish you with death and sickness. In summer, while I am in my house, you must not dance the Kū'siūt.'

Ever since that time the Bilqula dance the Kū'siūt. When a man has seen Anaūlikūtsai'ñ sitting before her cave he will invite the people to a Kū'siūt. A ring made of red and white cedar-bark is hung up in his house, and the uninitiated are not allowed to enter it. Only in the evening, when dances are performed, they may look on, standing close to the door. As soon as the dances are over they must retire from the taboo house. Each Kū'siūt lasts three days.

The various dances performed by members of the Kū'siūt are also the property of the gentes, and the right of performing them is restricted to members of the gens. They must not be given to a daughter's husband, as is the case with the Sisau'ñ dances (see above), but belong to the members of the gens alone. They may, however, be loaned and borrowed by members of the gens, who have a right to a particular dance, but who do not own it. Permission to use a mask or dance is obtained from the owner by payments. The owner may reclaim the dance or the borrower may return it at any time. Membership of the Kū'siūt is obtained through an initiation. At this time the novice is given his Kū'siūt name, which he retains throughout life. Each gens has its peculiar Kū'siūt names, which are inherited by young persons from their parents or from other relatives. Thus a young man who had the name of Pō'pō until he was about seventeen years old obtained at his initiation the name of Tl'akō'otl. I have not reached a very clear understanding of the details of the initiation; it seems that the dance is simply given to the novice in the same way as the Sisau'ñ, this initiation being connected with a potlatch. But still it seems possible that he must 'dream' of the dance which he is to perform. Only the highest degrees of the Kū'siūt have to pass through a religious ceremony of some importance. The highest degrees are the elaqō'tla (the Hā'mats'a of the Kwakiutl), the Ō'leq (the Nū'tlmatl of the Kwakiutl), and the Dā'tia (the Nō'ntsistatl of the Hē'iltuk). These grades are also hereditary. A Kū'siūt novice may acquire them at once at his first initiation.

When the elaqō'tla is initiated he goes into the forest, where he encounters his guardian spirit. It is believed that he goes up to the sun, and formerly he had to take human flesh along for food. The chiefs held a council the night preceding the beginning of the ceremonies, and anyone who wanted to show his liberality offered one of his slaves to be killed, in order to serve as food for the elaqō'tla. The offer was accepted and a payment of from ten to twenty blankets made for the slave. The latter was killed, and the members of the elaqō'tla order devoured one-half of the body before the departure of the novice to the woods. There the latter is tied up and left to fast. He may stay there for twenty or thirty days until the spirit appears to him and takes him up to the sun, where he is initiated. Early one morning he returns, and is heard outside the houses. He has lost all his hair, which, it is believed, has been torn

out by the strong breeze blowing in the higher regions. He is quite naked, and bites everyone whom he can lay hold of. If he cannot catch anyone he will bite his own arm. It is believed that he has lost his soul, which fled from the body when the spirit came to him. Therefore the shamans must try for four days to recapture his soul. The night after they have recovered it the Elaqō'tla dances clothed in a bear-skin and wearing a large headdress, heavy bracelets and anklets, all made of red and white cedar-bark. Some Elaqō'tla do not bite people, but merely devour raw salmon, or tear dogs to pieces and devour them. Those who bite people will also eat corpses. The Elaqō'tla has to observe a number of regulations. For four years after his initiation he must not gamble. He must stay away from his wife for one year, but this period is being reduced to one month. For two or three months he must not leave his house.

The Ō'leq (= the laugher) and the Dā'tia (= the thrower) do not go into the woods to be initiated, but both must fast three days before their first dance. The Ō'leq 'makes fun of everything' and scratches people with his nails. The Dā'tia carries stones and sticks, and breaks household goods and canoes. If he has destroyed some-object during the day he pays for it at night when he dances. The Ō'leq and the Dā'tia must stay for one month, after they have danced, in their houses.

If a person transgresses the laws of the Kū'siūt, for instance when the Elaqō'tla gambles, or when a man performs a dance to which he has no right, also when a person derides the ceremonies or makes a mistake in dancing, his punishment is death. The chiefs assemble in council and the offender is called before the court. After his offence has been proved he is asked whether he is willing to suffer the penalty of death. If he is not willing, and one of his relatives is found willing to take the penalty on himself, the guilty party is spared, and the substitute is killed in his stead. The execution of the judgment is entrusted to the shaman, who bewitches the condemned person by throwing disease into him, or by poisoning him in some other (supernatural?) way. The object thrown by the shaman is a shell, bone, or finger-nail, around the middle of which objects a human hair is tied. If this object strikes the offender he will fall sick. Blood collects in his stomach, and if it so happens that he vomits this blood, and with it the disease-producing object, he will recover, and is not molested any further. The masks (not the whistles and other ornaments) used in the Kū'siūt are burnt immediately at the close of each dancing season. Novices must wear a necklet of red cedar-bark over their blankets for a whole year. The masks used in the dances represent mythical personages, and the dances are pantomimic representations of myths. Among others the thunder-bird and his servant Atlqulā'tenum, who wears a mask with red and blue stripes over the whole face from the right-hand upper side to the left-hand lower side, and a staff with red and blue spiral lines, appear in the dances. Prominent masks are also Qē'mtsiōa and his brothers and his sister (see p. 6), Masmasalā'niq and his fellows, the raven and the Nusqé'mta, and many others.

#### CUSTOMS REGARDING BIRTH, PUBERTY, MARRIAGE, AND DEATH.

When the time of delivery approaches, the woman leaves the house and resorts to a small hut built for the purpose. She is assisted by pro-

fessional midwives. The child is washed in warm water. For ten days the mother must remain in this hut. Father and mother must not go near the room for a year (according to Nusk'Elu'sta, for ten days), else the salmon would take offence.

The child is soon given its first name. On this occasion the whole tribe is invited to a feast, the name is made public, and the guests receive small presents. The child retains this name until it becomes a member of the Kū'siūt, when it is given its Kū'siūt name. This ceremony takes place after puberty has been reached. About this period the young man gives his first potlatch and assumes the Qē'mtsioa name.

When a girl reaches puberty she must stay in the shed which serves as her bedroom, where she has a separate fireplace. She is not allowed to descend to the main part of the house, and must not sit by the fire of the family. For four days she must remain motionless in a sitting posture. She fasts during the daytime, but is allowed a little food and drink at a very early hour in the morning. After this term she may leave her room, but only through a separate opening. She must not yet come to the main room. When leaving the house she wears a large hat, which protects her face against the rays of the sun. It is believed that if the sun should shine on her face her eyes would suffer. She may pick berries on the hills, but must not come near the river or sea for a whole year. She must not eat fresh salmon, else she would lose her senses, or her mouth would be transformed into a long beak. She must not chew gum or eat snow (see Fifth Report of Committee, 1889, p. 42).

If a young man wishes to marry a girl he goes, surrounded by his friends, to the house of the girl's father and states his intention. His friends carry food and presents, and if the father accepts the suit he sends out a young man, who receives the food and presents and carries them into the house. Sometimes the father does not accept the offer at once. In such cases the young man may repeat the same ceremony until he is finally rejected or accepted. After the time of the marriage has been agreed upon between the contracting parties, and the day preceding the marriage has arrived, the young man invites all the people to a feast, during which he states that he is to be married on the following day. He asks a number of men, generally from twenty to thirty, and four women to assist him. On the following forenoon they assemble, and accompany the bridegroom to the girl's house. They sing outside, and four of the men dance. All of them have their faces painted red. Finally they enter, and the bridegroom gives a large amount of property to the girl's father. Then the girl leaves her parents and goes to the bridegroom, bringing him also a large amount of property which has been given to her for this purpose by her parents and relatives. He in turn gives her blankets and other apparel of the best quality, and distributes presents among her relatives. This is repeated after some time. All he has given to his bride and her relatives is repaid to him with interest. A rich girl will repay twice or three times the amount given by the man. At the time of the marriage the bride's father may promise the groom to give him his Sisau'kH secrets as soon as the pair have their first child. The children may belong to the father's or mother's gens, as the parents may choose.

In case of a separation the wife refunds the amount of purchase-money. The children may stay with either parent, or part of them may



go with the mother and part with the father. The decision is left to the parents and children.

When a person has died the corpse is washed, the face painted red, the legs are doubled up, and the arms folded over the breast. The nose-ornament of the deceased is put into his nose; his shirt is put on, the back part covering the breast and the front part turned backward. The body is placed in a box and the latter is either fastened on the lower branches of a tree or placed in a little house, which is set on posts, above the level of the ground. The face of the deceased is turned eastward. Part of his property and gifts from his friends are deposited near the grave. The masks of the deceased are burnt. His crest is carved on a memorial column, which also shows how many canoes, coppers, head-dresses, and slaves he had given away at potlatches. These objects are painted or carved on the columns. Formerly slaves were killed at the burial of chiefs. The number of slaves killed was also indicated by so many human figures on the memorial column. After burial food for the use of the deceased is thrown into the fire. This is repeated frequently during a prolonged period after the death has occurred. Whenever the friends of the deceased partake of a meal a little food is thrown down at a place between the fire and the door, where the entrance to the lower world, the home of the dead, is believed to be.

The bed of a mourner must be protected against the ghost of the deceased. His male relatives stick a thorn-bush into the ground at each corner of their beds. After four days these are thrown into the water. Mourners must rise early and go into the woods, where they stick four thorn-bushes into the ground, at the corners of a square, in which they cleanse themselves by rubbing their bodies with cedar-branches. They also swim in ponds. After swimming they cleave four small trees and creep through the clefts, following the course of the sun. This they do on four subsequent mornings, cleaving new trees every day. Mourners cut their hair short. The hair that has been cut off is burnt. If they should not observe these regulations it is believed that they would dream of the deceased. Women when mourning scratch their cheeks with shells or stones.

The mourning regulations for a widower or a widow are especially strict. For four days he (or she) must fast, and must not speak a word, else the dead wife or husband would lay a hand on the mouth of the offender, who would then die. They must not go near water, and are forbidden to catch or eat salmon for a whole year. For the same length of time they must not eat fresh herring or olachen. Widow and widower cleanse themselves in the same way as other mourners. Their shadows are considered unlucky, and must not fall on any person.

Some time after the death of a rich or influential person his nearest relative invites the whole tribe to a potlatch. On this occasion he sings a mourning song for the deceased and gives away presents to his guests. It was explained to me that this ended the mourning, and that it was 'the same as giving away the bones of the deceased.'

#### RELIGION AND SHAMANISM.

The mythology of the Bilqula differs greatly from the mythologies of the other tribes of the North Pacific coast. It is impossible to say to

what cause this divergence is due. Mythology and religion are so closely connected that a few words on the former must be added here. The principal deity of the Bilqula is Sng, the sun-god (compare *sōng*, sun). The rays of the sun are his eyelashes. When prayed to he is called Tāat'au. In praying the Bilqula look heavenward. I obtained the following formulas: *Ail:kHH itlō'tlsuq, Tīat'au*, 'Look on us where we are going, Tāat'au;' and *Tīat'au, atkhattnomdō'tlq*, 'Take care of us, Tāat'au.' Sng is pre-eminently the ruler of the world, and does not interfere with the actions and thoughts of men. These are given by Masmasalā'niq. According to the tradition of the Bilqula, before the liberation of the sun, and before the world was made as it is nowadays, four deities lived on the earth: Masmasalā'niq, Yula'timot, Matlapē'eqoek, and Itl'itlu'lak. The raven wished to obtain the sun, but he was unable to liberate it. Then he went to these deities and asked their help. They ascended to the sky, and tore the curtain, which up to that time had been expanded between heaven and earth, hiding the heavenly orbs. The sun appeared, but he shone dimly, as though darkened by clouds. The raven ascended to heaven through the rift made by Masmasalā'niq, and found there a beautiful prairie country in which all the birds lived. Masmasalā'niq and his brothers painted them beautifully and sent them down to earth, giving each his song and his arts. The raven was not content with the sun, and resolved to try and find a better one. He flew to the house of a great chief, who kept the *nusqē'mta* (*nu-ta*=place of, *sqēm*=the day is dawning). The *nusqē'mta* was a small round receptacle closed all around like an egg. The chief guarded it jealously, and kept it suspended from one of the rafters of his house. The raven knew that he could not obtain it by sheer force, and resorted to a ruse. He assumed the shape of the leaf of a spruce tree, and let himself drop into the pond from which the chief's daughter used to take water. The girl drank from the pond, swallowed the leaf, and thus became with child. She gave birth to a boy, who was the raven himself. The old chief loved the boy dearly, and allowed him to play with the *nusqē'mta*. This was what he desired. He ran out of the house, broke it, and flew away in the shape of a raven.

After the sun had thus been obtained Masmasalā'niq said: 'Let us make man.' He made the image of a man, out of wood, but he was unable to endow it with breath. Matlapē'eqoek and Itl'itlu'lak tried likewise to carve human figures and to give them life, but they failed. Finally, Yula'timot carved the figure of a man and endowed it with life. He made a man and a woman in each country, and they became the ancestors of all the numerous tribes. Then Masmasalā'niq gave them their arts. He taught them to build canoes, to catch salmon, to build houses. He made rivers everywhere, that man should have water to drink, and that the fish might go up the rivers to be caught by man.

The Bilqula believe that Masmasalā'niq and his brothers still continue to give new ideas to man. They say that any new design of painting or carving, or any other new invention made by a member of their tribe, has been given to him by Masmasalā'niq.

The religious side of the potlatch and of the secret societies has been referred to above.

The soul is believed to dwell in the nape. It is similar in shape to a bird inclosed in an egg. If the shell of the egg breaks and the soul flies away its owner must die. Shamans are able to see and to recover souls.

By laying their hands on the nape of a person they are able to tell whether his soul is present or whether it has left the body. If the soul should become weak they are able to restore it to its former vigour. If a person swoons it is believed that his soul has flown away without breaking its shell. The shaman hears its buzzing wings, which give a sound like those of a mosquito. He may catch and replace it in the nape of its owner. If the soul leaves the body without breaking its shell the owner becomes crazy.

The art of shamanism is bestowed by Snq. It is impossible to obtain it by means of fasting and praying, as is the case among the neighbouring tribes, but it is a free gift from the deity. A person who is to become a shaman will fall sick, and, during his illness, Snq will give him a song which must be kept a deep secret. After this he is able to cure diseases. If a person falsely pretends to have received the gift of shamanism, and tries to suck out diseases from a patient, he will fall sick himself.

When asked more closely about the curious difference between this method of obtaining the power and that of the neighbouring tribes my informant said: 'When an Awiky'é'noq wishes to become a shaman he may go to the mountain where the deity of their shamans resides (probably Mā'tem) who will initiate him. No Bilqula can obtain the art in such a way.'

Sickness is caused by a disease entering the body or by witchcraft (see p. 11). The shaman is able to extract the disease by sucking. A peculiar method of witchcraft, somewhat similar to the 'ek'a' of the Kwakiutl (see Sixth Report of the Committee, p. 60), was described to me as follows: The person who wants to bewitch his enemy endeavours to obtain some of his old clothing, portions soaked by perspiration being considered especially effective. After it is obtained a wolf is killed, and the clothing is put into its mouth, which is then tied up. Then the wolf is placed in a box. This procedure is called *shak*. Sometimes the clothing or some hair is inclosed in the bone of a wolf or of a dead person. No shaman can counteract these charms.

If a person has been murdered, and a string is tied firmly around the neck of the corpse, the murderer's neck will become diseased and he will be unable to breathe and will die. If sand is strewn in the corpse's eyes and the lids closed over it the murderer will die. If a person has been killed with a knife or arrow, or another weapon, to which some of his blood adheres, the latter is brought into contact with a wolf's head, dog's hair, or anything else that is bad, and then thrown into the fire or put into a frog's or snake's mouth; then the murderer will die.

I add here a few current beliefs:—

Sneezing indicates that people are talking about one.

Slight ringing of the ears indicates rain, loud ringing good weather.

Twitching of the muscles of the left side of the body is unlucky; of the right side lucky. Twitching of the skin under the eyes indicates that one will cry.

If a dog dreams and howls in its sleep its owner will die.

The breaking of a box without an apparent cause is unlucky.

#### WARS.

When a war party was organised the warriors did not paint their faces, but they put on headbands of white cedar-bark and strewed their

hair with white eagle-down. Warriors when on a war party must not drink more than four mouthfuls of water, else they would be killed. A watchman was appointed in each canoe, who sat in the bow. On landing near the village of their enemies they divided themselves into a number of parties, one house of the village being assigned to each. Then, early in the morning, when all were asleep, they rushed up to the village uttering their war cry 'wai!' They took a stand at the fire which burns in the centre of the house, and if any one of the enemies succeeded in taking up his arms and came out of his bedroom they killed him. Then they entered the bedrooms, killed the men, and took the women and children along as slaves. The heads of the dead were cut off, the houses burnt, and they returned home singing war-songs. The heads which they had taken along were then scalped, and the scalps tied to each end of a pole. When they approached their village one man stood up in the bow of each canoe and swang the pole to which the scalps were attached, and they all sang songs, in which their deeds were recounted. The scalps were valued the higher the longer and fuller the hair. They were used in the Sisa'k'u.

The following tales of war expeditions offer some points of interest. About thirty or forty years ago there was a famine at Bella Coola. The people went overland to Knight Inlet, which belongs to the Tenaqtaq, a tribe of the Kwakiutl, to fish there. The Tenaqtaq made fun of them, took from them the fish they caught, tore the blankets from the backs of the women, and seduced many of them. Finally the Bilqula returned home. There they held a council and resolved to make war upon the Tenaqtaq. The Tinneh joined them in this expedition. They crossed the mountains in four days. When they approached Knight Inlet they sent two spies in advance, who were to count the number of houses in the village of the Tenaqtaq. Early in the morning they attacked the houses and killed a great many men. The Tenaqtaq could not escape, as they were hemmed in by the river. The Bilqula slew them with knives, lances, and stone axes. They took away the clothes of the women, leaving them naked, and subjected them to shameful insults in revenge for the disgrace put upon their wives and daughters. Then they burnt the village.

About thirty-five years ago the Talio'm'u were attacked by the Kwakiutl. Originally they intended to attack Nuqa'lku, but the raven, according to the narrator, changed their mind, as he always protects the village of Nuqa'lku. They came in many canoes, while most of the Talio'm'u were at the lake, which is situated above that town, fishing. Four men were in charge of the village, and a number of old men and women had also remained at home. The father of Nusk'elu'sta, who told me of these events, happened to be out picking berries, accompanied by his wife. He saw the canoes passing by and kept himself hidden. The village of Talio was at that time surrounded by a strong stockade, which consisted of a double row of palisades crowned with thorns. At each corner there was a strong box fastened on the stockade like a tower. Here watchmen were stationed, who were able to shoot at the enemy while being themselves protected. At that time the Talio'm'u had only four guns. The Kwakiutl sent out two spies, who reported that the village was well fortified. The Talio'm'u had seen the canoes coming and were on their guard. The Kwakiutl thought that they would not be able to enter the village until after the stockade had been destroyed.

They resolved to make an attempt to burn it and to break open the door. On the following day they came up to the village, but the guard on the towers used their guns to such good effect that the enemy had to retreat with severe losses. They made still another attempt, but with no better success. They had lost many men, while only two old men of the Talio'mn, Tumh'akyas and A'l'kius by name, and one woman had been hurt. The latter had been killed. When the Kwakiutl turned back a messenger was at once sent up to the lake to call the young men, who then went to Nuqa'lkn to ask for help. The Kwakiutl passed close to Nusk'Elu'sta's father's canoe, but they were so terrified by the losses they had sustained that they passed by without so much as noticing it. Two of their number were so ashamed of their defeat that they would rather remain in the enemy's country than return with their friends, and they stayed ashore. Meanwhile the Talio'mn and the Bilqula were pursuing the fugitives. They had reached the outlet of Bentinck Arm without overtaking them. Then their chiefs resolved to return, as they believed that their enemies had a long start upon them. Later on they learnt that the Kwakiutl were at that moment only a few miles from them, about to continue their homeward journey, after having encamped at the outlet of the channel. Afterwards the Talio'mn found the two men who had remained ashore. They called them and promised to send them back to their friends, saying that the war had ended, and that they had no grudge against them. The men were, however, too much afraid, and finally starved to death.

Later on the Talio'mn and Bilqula organised an expedition against the Kwakiutl to take revenge for the unprovoked attack. A chief named Koani'la, whose father was a Talio'mn, while his mother was a Kwakiutl, was their leader. They intended to attack the Lē'kwiltok and the Kwē'k'sōt'ēnoq. When they approached the village of the latter they sent a canoe ahead to search for the village, and to report the number of houses. For two days they were unable to find the village, which lies in a labyrinth of islands; but finally they found it, and saw that it consisted of sixteen houses. On the next morning they attacked it. The tribe was wholly taken by surprise and almost all of them were killed. Koani'la's mother lived at this place, and when she heard the Bilqula coming she asked at once for her son, and was taken care of by him. Only five men and four women escaped. The Bilqula allowed these to run away, as they had killed as many as they desired. Anukhi'tsem, a chief of the Senqtlemh, was the only man of the Bilqula who was wounded. He died on the way home. They returned, but in the country of the Nā'koartok they were overtaken by four Kwakiutl canoes which pursued them. The Bilqula were victorious, but Koani'la induced them to desist. During the fight two of the women, whom they had taken as slaves, and one boy jumped overboard, and were rescued by the Kwakiutl.

#### MEDICINE.

Boils are treated by canterisation with dry bark or with gunpowder. Sometimes a series of parallel cuts is made over swellings or boils. Fractured bones are set, and fastened between splints of cedar-bark.

Enemata of shark oil or olachen oil are given by means of a kelp tube, with a mouthpiece made of the wing-bone of an eagle. Snake poison is collected and used as a poison. Women wear tight anklets 'to prevent

the calves of their legs from slipping down.' During their monthly periods women place soft cedar-bark in the vagina. The bark is afterwards burnt in the woods. The smoke of this fire is believed to be poisonous.

It is evident that the culture of the Bilqula is very greatly influenced by that of the Kwakiutl. The secret societies and the potlatch ceremonies are almost a copy of those of the Heiltsuk. This influence has been so deep that names of even deities and of the mythical ancestors of certain gentes are purely Kwakiutl words, or have at least Kwakiutl endings. Thus the name *Aiumki'likya* (see p. 7) is purely Kwakiutl, meaning 'good all over the world.' *K'omk'omki'likya* is also a Kwakiutl word, meaning 'the rich one of the world.' The chief's name, *Mā'lakyilatl* (see p. 3) belongs to the same class of Kwakiutl names. On the other hand, the religious ideas of the Bilqula are very curiously developed, and apparently but slightly influenced by their neighbours. The whole *Masmasalā'niq* tradition is peculiar to them, but has been partly adopted by the *Awiky'-ēnoq*, with whom the Bilqula have intermarried.

#### PHYSICAL CHARACTERISTICS OF THE TRIBES OF THE NORTH PACIFIC COAST.

The following tables embrace a considerable amount of material which I collected on a journey in Oregon and Washington, undertaken for the U.S. Bureau of Ethnology, together with material which I collected in British Columbia. Thanks to the liberality of Major J. W. Powell, Director of the Bureau of Ethnology, I am enabled to present here the results of all the measurements which I made on the North Pacific coast.

The tribes of this region proved to be so heterogeneous that it was necessary to subdivide the material into eleven groups, each embracing a number of closely allied tribes. I have distinguished the following groups:—

1. Tribes of British Columbia, north of Dean Inlet.
2. Kwakiutl and Nootka.
3. Bilqula.
4. Lower Fraser River.
5. Harrison Lake and Lillooet.
6. Tribes of Washington, including the whole coast of that State west of the Cascade Range.
7. Columbians, including the tribes in the immediate neighbourhood of Columbia River and in the Lower Willamette Valley.
8. Northern Oregon, including the Yakonan and Salish tribes between Umpqua and Columbia Rivers.
9. Oregonian Tinneh and Coosan.
10. Crosses between Oregonian Tinneh and Northern Californians.
11. Northern Californians.

Only a short series of measurements of each individual was made, such as could be taken by the removal of only a small portion of the clothing. Following is a list of the measurements.

- |                                      |   |
|--------------------------------------|---|
| 1. Stature.                          | 10. Width of head.                              |
| 2. Finger-reach.                     | 11. Width between zygomatic arches.             |
| 3. Height of ear.                    | 12. Distance from naso-frontal suture to chin.  |
| 4. Height of 7th vertebra.           | 13. Distance from naso-frontal suture to mouth. |
| 5. Height of acromion.               | 14. Height of nose.                             |
| 6. Height of point of second finger. | 15. Width of base of nose.                      |
| 7. Width between acromia.            | 16. Maximum width of nose.                      |
| 8. Height, sitting.                  |   |
| 9. Length of head.                   |   |

In measuring the 'stature,' the subject was asked to stand erect, but care was taken to avoid excessive stretching, as in these cases the stature during the process of measuring would undergo material changes. The 'finger-reach' is the greatest distance between the tips of the second fingers, the arms being extended horizontally. In this case the subject was encouraged to make the strongest possible effort. The measurements of stature, height of acromion, height of point of second finger, were taken in rapid succession, in order to avoid changes of position as much as possible. In measuring the point of the second finger the arms and hands were stretched out downward, so that hand and arm formed as nearly as possible a straight line. A glance at the tables will show that the results of the measurements of 'height of ear' (being the difference between the stature and the height of ear above the ground) as obtained by this method are very unsatisfactory. In most cases it was difficult to obtain a sufficiently level surface for a satisfactory comparison of the two measurements. Only among the Bilqula and the last three groups this difficulty did not present itself. But even in these cases I do not consider the results very accurate, mainly on account of the unavoidable movements of the subject. I should prefer, at another time, to measure the distance directly by Topinard's method. The difference between the heights of the acromion and of the point of the second finger gives the length of arm with greater accuracy, because I was able to take these two measurements without moving the scale. The length and width of the head are maximum measurements; the former is always taken from the glabella; the vertical measurements of the face were taken from the naso-frontal suture.

The indices require little explanation. The cephalic index is the proportion between length and width of the head, the latter being expressed in per cents. of the former. The index of the height of ear is the proportion between the length of head and the difference in height of the ear and vertex. The facial index is the proportion of the naso-mental line to the width of face, the index of the upper part of the face the proportion of the naso-oral line to the width of face. I have given two nasal indices, the proportions of the basal width and maximum width of the nose, the former being measured at the insertion of the alæ, to the height of nose. The last three columns contain finger-reach, height sitting, and length of arm, expressed in per cents. of the stature.

Before discussing the measurements I give the tables. The descriptions are withheld for the present, as it is desirable to gain some new data.

## 1. Various Northern Tribes.

Number . . . . .	Males						
	1	2	3	4	5	6	7
Name . . . . .	Samuel Gétlalgáo	Johnny Dixie	Johnny	William Seba'sa	Peter Vann Kesuwá'ók	Ke'lastaq	Angná'gané
Tribe . . . . .	Haida, Gold Harbour	Haida, Skidegate	Tsimshian, Fort Simpson	Tsimshian, Metlakabla	Tsimshian Metlakabla	Gyit'amá't	Gyit'amá't
Age . . . . .	25	50	32	28	25	21	20
Stature . . . . .	mm. 1,689	mm. 1,603	mm. 1,637	mm. 1,649	mm. 1,589	mm. 1,628	mm. 1,619
Finger-reach . . . . .	1,705	1,692	1,727	—	1,676	1,747	1,713
Height of seventh vertebra . . . . .	—	1,362	—	1,400	1,353	1,390	1,355?
Height of acromion . . . . .	1,382	1,311 1,286	1,313	1,329	1,321	1,330	1,333
Height of point of second finger . . . . .	612	570	571	614	597	598	600
Width between acromia . . . . .	—	—	—	—	—	381	368
Height, sitting . . . . .	—	873	876	—	—	908	895
Length of arm . . . . .	770	716	742	715	724	732	733
Length of head . . . . .	192	203	201	192	199	196	200
Width of head . . . . .	149	159	154	160	159	155	166
Height of ear . . . . .	149	—	127	127	126	133	127
Width of face . . . . .	154	142	151	146	151	151	158
Distance from chin to naso-frontal suture . . . . .	130	118	128	126	122	125	124
Distance from mouth to naso-frontal suture . . . . .	76	86	90	81	74	81	75
Height of nose . . . . .	58	—	57	62	54	54	56
Width of base of nose . . . . .	—	—	—	—	—	31	31
Maximum width of nose . . . . .	38	41	38	33	38	42	38
Cephalic index . . . . .	77.6	78.3	76.6	83.3	79.9	79.1	83.0
Index of height of ear . . . . .	77.6	—	63.2	66.1	63.3	67.9	63.5
Facial index . . . . .	84.4	83.1	84.1	86.3	80.8	82.8	78.3
Index of upper part of face . . . . .	49.4	60.6	59.6	55.5	49.0	53.6	47.6
Nasal index . . . . .	65.5	—	66.7	53.2	70.4	77.8	67.9
Index of base of nose . . . . .	—	—	—	—	—	57.4	55.4
Finger-reach in per cent. . . . .	101.0	105.5	105.5	—	105.5	107.3	105.8
Height, sitting " " . . . . .	—	54.5	53.5	—	—	55.8	55.3
Length of arm " " . . . . .	45.6	44.7	43.5	43.4	45.6	45.0	45.3



2. Kwakiutl and Nootka.

I. Males								II. Females	
1	2	3	4	5	6	7	8	9	10
Makamos	Ko'nutlema	Se'wit	Nalakyutsa	Shiwish	Nutchi	Aetitchinik	Wispu	Anuttl	Ts'ahwasamo'koa
F. Tsawateenoq M. Salimon R.	F. Awiky'enoq M. Kuc'tela	Nakoartok	Fort Rupert	Clayoquaht	Clayoquaht	Clayoquaht	Nittinaht	Clayoquaht	Clayoquaht
24	34	40	50	40	48	55	25	52	55
mm. 1,647 1,756 — 1,330 574 387 889. 756	mm. 1,695 1,833 1,450 1,381 629 397 876 752	mm. 1,633 1,780 1,380 1,314 578 371 898 736	mm. 1,575 1,664 1,299? 1,292 571 — 873 721	mm. 1,612 1,651 1,365 1,313 589 370 876 724	mm. 1,574 1,791 — 1,276 496 386 838 780	mm. 1,565 1,742 1,626 1,254 524 386 838 730	mm. 1,711 1,829 1,475 1,403 618 — 914 785	mm. 1,441 1,555 1,225 1,191 521 330 799 670	mm. 1,471 1,571 1,238 1,191 536 340 804 655
201 <sup>1</sup> 161 <sup>1</sup> 139 <sup>1</sup> 146 116  73  53 33 39	195 <sup>1</sup> 158 <sup>1</sup> 144 <sup>1</sup> 152 127  84  57 30 35	200 <sup>1</sup> 164 <sup>1</sup> 136 <sup>1</sup> 157 140  90  63 30 39	206 <sup>1</sup> 175 <sup>1</sup> 130 <sup>1</sup> 138 121  81  54 — 35	193 149 136 150 127  79  50 37 41	196 150 120 154 121  78  55 39 40	193 155 140 150 141  87  63 34 37	189 162 135 152 127  78  60 — 41	177 143 138 139 113  75  51 31 32	187 151 126 152 119  81  53·5 33 37
80·1 <sup>1</sup> 69·2 <sup>1</sup> 79·5 50·0 73·6 62·3	81·0 <sup>1</sup> 73·8 <sup>1</sup> 83·5 55·3 61·4 52·8	82·0 <sup>1</sup> 73·0 <sup>1</sup> 89·2 57·3 61·9 47·6	85·0 <sup>1</sup> 63·1 <sup>1</sup> 87·7 58·7 64·8 —	77·2 70·5 89·2 52·6 82·0 74·0	76·5 61·2 78·6 50·6 72·7 70·9	80·3 72·5 94·0 58·0 58·7 54·0	85·7 71·4 83·6 47·3 68·3 —	80·8 78·0 81·3 54·0 62·7 60·8	80·7 67·4 78·3 53·3 69·1 61·7
106·6 54·0 45·9	108·1 51·7 44·4	109·0 55·0 45·1	105·6 55·4 45·8	102·4 54·3 44·9	113·8 53·2 49·6	111·3 53·5 46·6	106·9 53·4 45·9	107·9 55·4 46·4	106·8 54·7 44·5

<sup>1</sup> Head deformed.

## 4.—Lower Fraser River. Males.

Number . . . . .	1	2	3	4	5	6	7	8
Name . . . . .	Auguste	Jimmy Amiry	Baptiste	Willie Coutas	George	Baptiste Amiry, brother of 2	Tommy	Pierre
Tribe . . . . .	F. Skaulits M. Sumass	Squotash	F. Sumass M. Ntlakyapamug	F. Hope M. Kaltash Lake	F. Skaulits M. Sumass	Squotash	F. Ewahoos M. Ntlakyapamug	Chilliwack
Age . . . . .	9	9-10	10	10	10	12	12	12
Stature . . . . .	mm. 1,219	mm. 1,260	mm. 1,378	mm. 1,324	mm. 1,332	mm. 1,381	mm. 1,368	mm. 1,365
Finger-reach . . . . .	1,238	1,279	1,435	1,364	1,378	1,462	1,419	1,428
Height of 7th vertebra . . . . .	1,020	1,062	1,168	1,117	1,125	1,167	1,156	1,143
Height of acromion . . . . .	974	1018	1108	1,062	1,079	1,095	1,105	1,077
Height of point of second finger . . . . .	432	451	493	469	486	475	504	469
Width between acromia . . . . .	273	289	322	289	316	314	318	310
Height, sitting . . . . .	684	705	733	717	724	749	743	747
Length of arm . . . . .	542	559	615	593	593	620	601	608
Length of head . . . . .	170	172 <sup>1</sup>	183	177.5	170	178	165 <sup>1</sup>	175
Width of head . . . . .	145	154 <sup>1</sup>	155	151	152	155	154 <sup>1</sup>	152
Height of ear . . . . .	119	112	132	125	126	129	130	137
Width of face . . . . .	125	128	142	127	133	132	135	136
Distance from chin to naso-frontal suture . . . . .	102	106	105	106	105	110	104	107
Distance from mouth to naso-frontal suture . . . . .	64	64	64	65	68	69	67	72
Height of nose . . . . .	41	41	43	46	44	44	43	45
Maximum width of nose . . . . .	28	29	28	22	25	28.5	28	29
Width of base of nose . . . . .	35	34	34	29	33	35	33	33
Cephalic index . . . . .	85.3	89.5 <sup>1</sup>	84.7	85.1	89.4	87.1	93.3 <sup>1</sup>	86.9
Index of height of ear . . . . .	70.0	65.1	72.1	70.4	74.1	72.5	78.8	78.3
Facial index . . . . .	81.6	82.8	73.9	83.4	78.9	83.3	77.0	78.7
Index of upper part of face . . . . .	51.2	50.0	45.1	51.2	51.1	52.3	49.6	52.9
Nasal index . . . . .	85.3	82.9	79.1	63.0	75.0	79.5	76.7	73.3
Index of base of nose . . . . .	68.3	70.7	65.1	47.8	56.8	64.7	65.1	64.4
Finger-reach, per cents. . . . .	101.5	101.5	104.1	103.0	103.4	105.8	103.7	104.6
Height, sitting, " . . . . .	56.1	56.0	53.2	54.1	54.4	54.2	54.3	54.7
Length of arm, " . . . . .	44.5	44.4	44.6	44.8	44.5	44.9	43.9	44.5

<sup>1</sup> Doubtful whether head deformed.

## 4.—Lower Fraser River. Males (continued).

9	10	11	12	13	14	15	16	17	18	19	20
Andrew Shea	Harry Jimmy	Felix <sup>a</sup>	Alec	George	Felix	Billy	Captain Paul	George Tseelis	Joe	Sam	Captain Jim
Scooyam	Chilliwack	Hope	Scooyam	Sumass	Nekamen	Koantel	Nekamen	Tseelis	Tseelis	Tseelis	Tseelis
12	12	14-15	15	15	31	35	48	50	50-55	65	70-80
mm. 1,403 1,438 1,191 1114 <sup>r</sup> 1124 <sup>r</sup> 511 <sup>r</sup>	mm. 1,397 1,419 1,184 1,125	mm. 1,549 1,614 — 1,272	mm. 1,576 1,682 1,359 1,279	mm. 1,600 1,634 1,359 1,289	mm. 1,657 1,720 — 1,343	mm. (1,663) 1,807 — — (581)	mm. — — — —	mm. 1,649 1,750 — 1,349 557	mm. 1,606 1,701 — 1,321 581	mm. 1,651 1,867 — 1,359 540	mm. — — — — —
286 744 613	277 749 593	348 825 686	371 849 711	349 851 693	406 898 726	— — —	— — —	378 900 792	370 870 741	381 — 819	— — —
176.5 153 131 129 103	171 152 131 129 105	180 157.5 130 144 121	185 158 141 143 116	183 155 138 137 114	191 181 <sup>1</sup> — 151 122	200 <sup>1</sup> 181 <sup>1</sup> — 167.5 119	188 <sup>2</sup> 166 <sup>2</sup> — 157 122	183.5 <sup>1</sup> 183 <sup>1</sup> 138 162 137	187.5 <sup>1</sup> 170 <sup>1</sup> 133 161 132	190 <sup>1</sup> 171 <sup>1</sup> 138 161 130	187 <sup>1</sup> 166 <sup>1</sup> — 160 124
70	68	77	73	72	76	74	85	89	86	83	81
45 31 37	42 33 37	46 28 34	49 35 41	51 31 36	55 33 39	52 32 41	56 35 40	62 37 45	58 31 38	56 33 38	60 32 39
86.7 74.2 79.8 54.3	88.9 76.6 81.4 52.7	87.5 72.2 84.0 53.5	85.4 76.2 81.1 51.0	84.7 75.4 83.2 52.6	82.7 68.1 80.8 50.3	90.5 <sup>1</sup> — 71.0 44.2	88.3 <sup>2</sup> — 77.7 54.1	100.0 <sup>1</sup> 75.2 84.6 54.9	90.6 <sup>1</sup> 70.9 82.0 53.4	89.5 <sup>1</sup> 72.6 80.8 51.6	88.8 <sup>1</sup> — 77.1 50.6
82.2 68.9	88.3 78.6	73.9 60.9	83.8 71.4	70.7 60.8	70.9 60.0	78.8 61.5	71.4 62.5	72.4 59.7	65.5 53.4	67.9 58.9	65.0 53.3
102.5 53.0 43.7	101.6 53.6 42.5	104.2 53.3 44.3	106.7 53.9 45.1	102.1 53.2 43.3	103.7 54.2 43.8	108.7 — —	— — —	106.1 54.6 43.1	105.9 54.2 46.1	113.1 — 49.0	— — —

<sup>1</sup> Head deformed.<sup>2</sup> Doubtful whether head deformed.

7. *Columbians.*

I. Males					
Number . . . . .	1	2	3	4	5
Name . . . . .	Charles Dan	Howard Cultec, son of No. 10	Eddy Riggs	Joseph Cultec, brother of No. 2, son of No. 10	?
Tribe . . . . .	Yakima	F. Chinook M. Chihalis	F. Umpqua M. Khekatat	F. Chinook M. Chihalis	F. Yakima M. Snohomish
Age . . . . .	12	15	17	21	24
Stature . . . . .	mm. 1,447	mm. 1,634	mm. 1,666	mm. 1,747	mm. 1,625
Finger-reach . . . . .	1,466	1,713	1,708	1,833	1,775
Height of seventh vertebra . . . . .	1,222	—	—	1,501	1,403
Height of acromion . . . . .	1,168	1,295	1,336	1,400	1,308
Height of point of second finger . . . . .	517	552	622	613	578
Width between acromia . . . . .	310	375	—	426	370
Height, sitting . . . . .	775	867	889	952	897
Length of arm . . . . .	651	743	714	787	730
Length of head . . . . .	178	179	184	191 <sup>1</sup>	186
Width of head . . . . .	147	150	149	164 <sup>1</sup>	153
Height of ear . . . . .	133	129	146	154 <sup>1</sup>	124
Width of face . . . . .	131	140	135	153	145
Distance from chin to naso-frontal suture . . . . .	116	116	118	129	120
Distance from mouth to naso-frontal suture . . . . .	76	72	69	84	76
Height of nose . . . . .	50	52	48	59	55
Width of base of nose . . . . .	24	32	33	29	33
Maximum width of nose . . . . .	31	38	—	37	40
Cephalic index . . . . .	82·6	83·8	81·0	85·9 <sup>1</sup>	82·3
Index of height of ear . . . . .	74·7	72·1	79·3	80·6 <sup>1</sup>	66·7
Facial index . . . . .	88·6	82·9	87·4	84·3	82·8
Index of upper part of face . . . . .	58·0	51·4	51·1	54·9	52·4
Nasal index . . . . .	62·0	73·1	—	62·7	72·7
Index of base of nose . . . . .	48·0	61·5	63·5	49·1	60·0
Finger-reach in per cent. . . . .	101·3	104·8	102·5	104·9	109·2
Height, sitting, " . . . . .	53·6	53·0	53·5	54·5	55·1
Length of arm, " . . . . .	45·0	45·5	42·8	45·1	45·0

<sup>1</sup> Head deformed.

7. *Columbians* (continued).

I. Males							II. Females		
6	7	8	9	10	11	12	13	14	15
Oscar Wilbur	George Wilbur	Henry Winslow	Tom Gilbert	Charles Culter, father of Nos. 2 and 4	John Pratt	Dick Hall	Lena Wilbur	Louise Wilbur	Catherine
Klickat	Klickat	Clackamas	F. $\frac{3}{4}$ Molalla, $\frac{1}{4}$ Clackamas, M. $\frac{3}{4}$ Molalla, $\frac{1}{4}$ Clackamas	F. Chinook M. Katlamat	Kalapooya	Klickat	F. Klickat, No. 6 M. Alsea	F. Klickat, No. 6 M. Alsea	F. Chinook M. Clatsop
34-35	37	40	46	50	50	56-60	8-9	13	55
mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
1,777	1,615	1,758	1,668	1,682	1,722	1,651	1,224	1,459	1,520
1,851	1,727	1,865	1,750	1,731	1,803	1,719	1,244	1,514	1,560
1,549	1,371	—	1,438	1,447	1,501	1,417	1,006	1,247	—
1,454	1,329	1,441	1,373	1,362	1,447	1,365	971	1,175	1,238
676	600	670	654	584	676	613	465	552	581
387	343	—	381	397	—	—	277	348	356
952	894	927	895	921	941	869	672	797	817
778	729	771	719	778	771	752	506	623	657
193	184	201	190 <sup>1</sup>	186 <sup>1</sup>	181 <sup>1</sup>	182 <sup>1</sup>	171	175	173 <sup>1</sup>
156	157	158	176 <sup>1</sup>	185 <sup>1</sup>	153 <sup>1</sup>	156 <sup>1</sup>	151	158	161 <sup>1</sup>
120	129	153	135 <sup>1</sup>	139 <sup>1</sup>	116 <sup>1</sup>	129 <sup>1</sup>	132	130	129 <sup>1</sup>
156	147	145	164	160	144	147	130	141	149
129	124	114	128	129	124	126	104	112	111
83	75	75	85	85	82	76	63	71	77
54	52	47	61	62	59	55	42	48	50
29	33	29	32	37	27	34	26	33	34
—	—	36	38	39	36	37	—	—	39
80.8	85.3	78.6	92.6 <sup>1</sup>	99.5 <sup>1</sup>	84.5 <sup>1</sup>	85.7 <sup>1</sup>	88.3	90.3	93.1 <sup>1</sup>
62.2	70.1	76.1	71.1 <sup>1</sup>	74.7 <sup>1</sup>	—	70.9 <sup>1</sup>	77.2	74.3	74.6 <sup>1</sup>
82.7	84.4	78.6	78.0	80.1	86.1	85.7	80.0	79.4	74.5
53.2	51.0	51.7	51.8	53.1	56.9	51.7	48.5	50.4	51.7
—	—	76.6	62.3	62.9	61.0	67.3	—	—	78.0
53.7	63.5	61.7	52.4	59.7	45.7	61.8	61.9	68.7	68.0
105.0	106.9	106.1	104.9	102.9	104.7	104.1	101.6	103.7	102.6
53.6	55.3	52.7	53.7	54.7	54.6	52.7	54.9	54.6	53.8
43.8	45.2	43.9	43.2	46.3	44.8	45.6	41.4	42.7	43.2

<sup>1</sup> Head deformed.

8. *Alsea and Tillamook.*

I. Males					
Number . . . . .	1	2	3	4	5
Name . . . . .	Evans Johns	Andie Baxter	David Dick	Frank Stanton	Louis Fuller
Tribe . . . . .	Alsea	Tillamook	Salmon River	Alsea	F. Tillamook M. Sletz
Age . . . . .	8	8-9	12	20	22
Stature . . . . .	mm. 1,238	mm. 1,270	mm. 1,384	mm. 1,676	mm. 1,698
Finger-reach . . . . .	1,247	1,311	1,364	1,708	1,752
Height of seventh vertebra . . . . .	1,038	1,048	1,152	1,422	1,427
Height of acromion . . . . .	981	991	1,101	1,374	1,378
Height of point of second finger . . . . .	443	419	511	649	640
Width between acromia . . . . .	260	283	310	360	402
Height, sitting . . . . .	687	690	754	941	924
Length of arm . . . . .	538	572	590	725	738
Length of head . . . . .	169.5	185	181	182 <sup>1</sup>	178
Width of head . . . . .	153.5	145	154	164 <sup>1</sup>	149
Height of ear . . . . .	121	127	146	140 <sup>1</sup>	135
Width of face . . . . .	128	131	—	155	138
Distance from chin to naso-frontal suture . . . . .	102	97	116	126	112
Distance from mouth to naso-frontal suture . . . . .	66	61	—	80	73
Height of nose . . . . .	44	40	53	55	52
Width of base of nose . . . . .	27	28	28	28	30
Cephalic index . . . . .	90.5	78.4	85.1	90.1 <sup>1</sup>	83.7
Index of height of ear . . . . .	71.4	68.6	80.7	76.9 <sup>1</sup>	75.8
Facial index . . . . .	79.6	74.0	—	81.3	81.2
Index of upper part of face . . . . .	51.6	46.6	—	51.6	52.9
Index of base of nose . . . . .	61.4	70.0	52.8	50.9	57.7
Finger-reach in per cent. . . . .	100.7	103.2	98.6	101.9	103.2
Height, sitting, „ . . . .	55.5	54.3	54.5	56.1	54.4
Length of arm, „ . . . .	43.4	45.1	42.7	43.3	43.5

<sup>1</sup> Head deformed.

8. *Alsea and Tillamook* (continued).

I. Males					II. Females				
6	7	8	9	10	11	12	13	14	15
Marcellus, brother of No. 5	Fred Jackson	Thomas Jackson	U. S. Grant	William Smith	Ollie Jim	Julia Ben	Louise George	Wife of Oscar Willour (No. 6, table 7)	Wife of Hais John, grandmother of No. 2
F. Tillamook M. Sletz	Alsea	Alsea	Alsea	Alsea	Alsea	Alsea	Tillamook	Alsea	Alsea
23	25	30	30	55	11	16	18	30	55-60
mm. 1,596 1,685 1,364 1,289 584 393 887 705	mm. 1,662 1,780 1,425 1,330 583 390 911 757	mm. 1,684 1,791 1,452 1,373 603 370 931 770	mm. 1,631 1,706 1,384 1,311 611 373 907 700	mm. 1,609 1,713 1,397 1,310 594 379 887 716	mm. 1,416 1,428 — 1,139 533 318 768 606	mm. 1,508 1,524 1,301 1,225 552 330 — 673	mm. 1,530 1,576 1,308 1,228 551 352 841 677	mm. 1,562 1,636 1,321 1,266 569 367 824 697	mm. 1,460 1,499 1,233 1,199 581 325 811 618
184 156 130 144 122 76 54 31	180 <sup>1</sup> 165 <sup>1</sup> 151 <sup>1</sup> 152 124 77 57 36	180 <sup>1</sup> 159 <sup>1</sup> 141 <sup>1</sup> 152 120 72 53 32	176 <sup>1</sup> 170 <sup>1</sup> 140 <sup>1</sup> 152 120 75 54 34	187 <sup>1</sup> 167 <sup>1</sup> 140 <sup>1</sup> 154 116 75 52 33	178 149 159 133 102 — 43 35	165 145 127 128 107 — 49 28	186 <sup>1</sup> 166 <sup>1</sup> 149 <sup>1</sup> 145 119 80 58 28	185 <sup>1</sup> 162 <sup>1</sup> 134 <sup>1</sup> 145 120 81 56 30	179 <sup>1</sup> 159 <sup>1</sup> 143 <sup>1</sup> 14 11 — 58 31
84·8 70·7 84·7 52·8 57·4	91·7 <sup>1</sup> 83·9 <sup>1</sup> 81·6 50·7 63·2	88·3 <sup>1</sup> 78·3 <sup>1</sup> 78·9 47·4 60·4	96·6 <sup>1</sup> 79·5 <sup>1</sup> 78·9 49·3 63·0	89·3 <sup>1</sup> 74·9 <sup>1</sup> 75·3 48·7 63·5	83·7 89·3 76·7 — 81·4	87·9 <sup>2</sup> 77·0 83·6 — 57·1	89·2 <sup>1</sup> 80·1 <sup>1</sup> 82·1 55·2 48·3	87·6 <sup>1</sup> 72·4 <sup>1</sup> 82·6 55·9 53·6	88·8 <sup>1</sup> 79·9 <sup>1</sup> 76·6 — 53·4
105·6 55·6 44·2	107·1 54·8 44·9	106·4 55·3 45·7	104·6 55·6 42·9	106·5 55·1 44·5	100·8 53·5 42·8	101·1 — 44·7	103·0 55·0 44·2	104·7 52·8 44·6	102·7 55·5 42·4

<sup>1</sup> Head deformed.<sup>2</sup> Doubtful whether head deformed.

## 10. Crosses between Oregonian Tinneh and Northern Californians.

Number . . . . .	I. Males					
	1	2	3	4	5	6
Name . . . . .	Joseph Adams	Walter A. Ben	Isaac Washington	David John	Launy	John Adams
Tribe . . . . .	F. Shasta M. Sixes	F. Galice Creek M. Klamath	F. Klamath M. Applegate	F. Klamath M. Rogue River	F. Shasta M. Rogue River	F. Applegate M. Shasta
Age . . . . .	17	22	22	24	26	45
Stature . . . . .	mm. 1,593	mm. 1,681	mm. 1,570	mm. 1,636	mm. 1,636	mm. 1,647
Finger-reach . . . . .	1,717	1,747	1,615	1,703	1,676	1,753
Height of seventh vertebra . . . . .	1,355	1,441	1,322	1,390	1,371?	1,438
Height of acromion . . . . .	1,297	1,352	1,265	1,352	1,330	1,362
Height of point of second finger . . . . .	549	624	571	619	600	592
Width between acromia . . . . .	360	386	375	362	—	376
Height, sitting . . . . .	841	892	886	881	908	876
Length of head . . . . .	173	187	181	177	193 <sup>1</sup>	184
Width of head . . . . .	155	149	155	154	149	148
Height of ear . . . . .	149	145	135	133	116	133
Width of face . . . . .	144	135	143	136	142	148
Distance from chin to naso-frontal suture . . . . .	121	125	119	122	122	120
Distance from mouth to naso-frontal suture . . . . .	—	76	80	78	71	—
Height of nose . . . . .	53	52	55	54	50	53
Width of base of nose . . . . .	32.5	27	28	24	32	31
Cephalic index . . . . .	89.6	79.7	85.6	87.0	77.2	80.4
Index of height of ear . . . . .	86.1	77.5	74.6	75.1	—	72.3
Facial index . . . . .	84.0	92.6	83.2	89.7	85.9	81.1
Index of upper part of face . . . . .	—	56.3	55.9	57.4	50.0	—
Index of base of nose . . . . .	61.3	52.0	50.8	44.4	64.0	58.3
Finger-reach, in per cent. . . . .	107.8	103.9	102.9	104.1	102.4	106.4
Height, sitting, " . . . . .	52.8	53.1	56.4	53.9	55.5	53.2
Length of arm, " . . . . .	47.0	43.3	44.2	44.8	44.6	46.7
Minimum width of forehead . . . . .	—	—	—	108	—	—
Maximum width of nose . . . . .	—	—	—	41	—	—

<sup>1</sup> 197 from glabella.



11. *Southern Oregon and Northern California.*

Number . . . . .	I. Males							II. Fe- male
	1	2	3	4	5	6	7	8
Name . . . . .	Edward Metcalf, son of No. 4	Clark Smith	Klamath Billy	Robert Metcalf	Thomas Smith	Klamath Bob	Klamath Charlie	Annie Shellhead
Tribe . . . . .	Shasta	Klamath	Klamath	Shasta	F. Shasta. M. Klamath	Klamath	Klamath	Klamath
Age . . . . .	16	18	35	40	48	50	60	45-50
Stature . . . . .	mm. 1,606	mm. 1,615	mm. 1,622	mm. 1,666	mm. 1,612	mm. 1,551	mm. 1,570	mm. 1,554
Finger-reach . . . . .	1,665	1,756	1,681	1,719	1,714	1,651	1,630	1,525
Height of seventh ver- tebra . . . . .	1,365	1,374	1,381	1,437	1,365	1,313	1,349	—
Height of acromion . . . . .	1,282	1,303	1,301	1,359	1,317	1,227	1,238	1,241
Height of point of second finger . . . . .	565	559	581	619	576	557	557	611
Width between ac- romia . . . . .	—	400	373	—	352	367	340	325
Height, sitting . . . . .	870	847	881	889	854	795	813	889
Length of head . . . . .	189	194	183	190	190	187	189	187
Width of head . . . . .	150	154	149	152	152	155	154	146
Height of ear . . . . .	130	133	133	127	141	146	158	142
Width of face . . . . .	139	144	147	148	145	142	148	148
Distance from chin to naso-frontal suture . . . . .	120	128	123	121	121	123	128	116
Distance from mouth to naso-frontal suture . . . . .	76	79	76	71	72	79	85	74
Height of nose . . . . .	52	51	55	53	47	55	62	52
Width of base of nose . . . . .	29	31	31	34	30	31	36	31
Cephalic index . . . . .	79.4	79.4	81.4	80.0	80.0	82.9	81.5	78.1
Index of height of ear . . . . .	68.8	68.6	72.7	66.8	74.2	78.1	83.6	75.9
Facial index . . . . .	86.3	88.9	83.7	81.8	83.5	86.6	86.5	81.1
Index of upper part of face . . . . .	54.7	54.9	51.7	48.0	49.7	55.6	57.4	51.7
Index of base of nose . . . . .	55.8	60.8	56.3	64.1	63.9	56.3	58.1	59.8
Finger-reach in per cent. Height, sitting, " . . . . .	103.7	108.7	103.6	103.2	106.3	106.4	103.8	98.1
Height, sitting, " . . . . .	54.2	52.4	53.7	53.4	53.0	51.3	51.8	57.2
Length of arm, " . . . . .	44.7	46.1	44.4	44.4	46.0	43.2	43.4	40.5
Minimum width of fore- head . . . . .	102	—	—	100	—	—	—	—
Maximum width of nose . . . . .	35	—	—	36	—	—	—	—

In order to discuss the material contained in the preceding tables, I have arranged it in series. The series for 'Stature,' 'Cephalic Index,' 'Facial Index,' 'Index of Upper Part of Face,' 'Finger-reach,' 'Height, sitting,' and 'Length of Arm,' are given here. In selecting the cases to be included in each series, it was necessary to exercise some criticism. The ages of all individuals are estimated more or less incorrectly. In order to fix the lower limit, I assumed nineteen years for males and seventeen years for females as the limit. For the facial index I assumed the limits as twenty and eighteen. Only in such cases where the measurements of a male of about eighteen years exceeded the corresponding most frequent measurements of adults, I included the case in the series, as the probability is, that such an individual had reached approximately its maximum growth. By this method the total results cannot be depressed. It is more difficult to decide on an upper limit. It appears clearly from the tables that the changes incident to old age begin very early among these Indians. The stature decreases, and the facial index diminishes on account of the wearing down of the teeth. But there are great individual differences regarding the time of the beginning of these changes. A decrease of stature will always tend to increase the relative length of arm, because the absolute length of the latter does not decrease proportionately. In the same way the proportional part of the 'height, sitting' decreases as the trunk loses more rapidly, through the increasing curvature of the spine, than the legs do. I have, therefore, excluded all such individuals over forty-eight years (estimated), in whom these indices differ from the most frequently occurring indices in such a sense that they might be explained as caused by loss in size.

A comparison of children's cephalic indices and of those of adults does not seem to bring out any typical differences between the two; for this reason, which is entirely in accord with Welcker's investigations of the growth of the skull ('*Untersuchungen über Wachstum und Bau des menschlichen Schädels*,' Leipzig, 1862), I have not separated children and adults. Neither do I find an appreciable difference between the indices of males and females, and consider it therefore justifiable to lump all the observations on this point. If, in Table 9, the measurements of Oregonian Tinnah, north of Rogue River, are tabulated separately [for what reason this separation is made, will appear later], the following result is obtained, which shows how nearly the maxima of frequency of occurrence of values of the cephalic index coincide among boys, girls, adult males and adult females:—

Cephalic Index	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	Average
Boys . . .	—	—	—	—	—	—	—	—	—	—	1	1	—	—	2	—	87.7
Girls . . .	—	—	—	—	—	1	—	—	—	1	—	1	—	—	—	—	83.9
Adult males . .	1	—	—	—	—	—	2	1	2	1	4	—	1	—	—	1	83.8
Adult females .	—	—	—	—	—	—	2	—	2	1	—	2	—	—	—	—	83.8

The following tables give the number of occurrences of certain values of stature and various indices among the different tribes. I have refrained from reducing the figures in such a way that they would indicate how many individuals among a thousand would have a certain stature or a certain index. Although apparently by such a procedure the figures become more easily comparable, there is no justification for such a reduction, as the frequency of occurrence of certain values is not proportional to the number of observations. With an increasing number

Number . . . . .	1	2	3	4
Name . . . . .	San Piel (son of No. 30)	Louis (brother of No. 1)	Sk'k'em Joe Na'ha (son of No. 31)	Pe'l Nias (son of No. 4f)
Tribes . . . . .	Lower Kootenay	Lower Kootenay	F. Lower Kootenay M. Upper Kootenay	Lower Kootenay
Age . . . . .	3	5	5	6
Height, standing . . . . .	mm. 832	mm. 1,051	mm. 1,097	mm. 1,224
Height of shoulder . . . . .	638	810	880	831
Height of point of second finger . . . . .	293	347	382	331
Length of arm . . . . .	345	463	498	500
Finger-reach . . . . .	831	1,053	1,111	1,225
Height, sitting . . . . .	503	589	566	553
Width of shoulders . . . . .	190	206	272	205
Length of head . . . . .	165	185	176	174
Breadth of head . . . . .	134	139	143	151
Distance from root of nose to chin . . . . .	83	100	90	100
Distance from root of nose to between lips . . . . .	50	65	61	62
Width of face . . . . .	108	123	124	123
Height of nose . . . . .	37	41.5	42	43.5
Width of nose . . . . .	28	32	30	28
Weight in pounds . . . . .	—	—	46	—
<i>Indices :</i>				
Height of shoulder . . . . .	76.7	77.1	80.2	85
Index of length of arm . . . . .	41.5	44.1	45.4	48
Index of finger-reach . . . . .	99.9	100.2	101.3	101
Index of height, sitting . . . . .	60.5	56.0	54.3	51
Index of width of shoulders . . . . .	22.8	19.6	24.8	19
Cephalic index . . . . .	81.2	75.1	81.2	74
Index of upper part of face . . . . .	46.30	52.85	49.19	41
Facial index . . . . .	76.85	81.30	72.58	83
Nasal index . . . . .	75.68	77.10	71.43	62

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Number . . . . .	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Name . . . . .	San Piel (son of No. 30)	Louis (brother of No. 1)	Ská'kém, Joe Na'na (son of No. 31)	Pe'l.Nias (son of No. 45)	Tamas (son of No. 33)	Basile Stanislas	Jack?	Michel (son of No. 36)	Spolot	Gabriel Benoit	George Antoine	Basile (son of No. 33)	Charlie?	Jim?	Posila
Tribes . . . . .	Lower Kootenay	Lower Kootenay	F. Lower Kootenay M. Upper Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay of Flatbow Lake	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay
Age . . . . .	3	5	5	6	8	9	9	9	10	13	13	13	15	15	14
Height, standing . . . . .	mm. 832	mm. 1,051	mm. 1,097	mm. 1,024	mm. 1,245	mm. 1,385	mm. 1,421	mm. 1,155	mm. 1,143	mm. 1,400	mm. 1,522	mm. 1,406	mm. 1,668	mm. 1,558	mm. 1,58
Height of shoulder . . . . .	638	810	880	331	1,045	1,140	1,161	924	910	1,160	1,301	1,155	1,427	1,307	1,3
Height of point of second finger . . . . .	293	347	382	331	462	520	521	380	383	510	652	536	652	610	1,3
Length of arm . . . . .	345	463	498	500	583	620	640	544	527	650	649	619	775	697	6
Finger-reach . . . . .	831	1,053	1,111	1,025	1,269	1,399	1,443	1,231	1,142	1,475	1,541	1,442	1,707	1,573	1,3
Height, sitting . . . . .	503	589	566	553	535	709	679	619	604	747	791	695	883	775	1,3
Width of shoulders . . . . .	190	206	272	205	240	265	260	239	216	304	245	252	338	251	2
Length of head . . . . .	165	185	176	174	181	180	179	182	173	189	185	185	189	187	1
Breadth of head . . . . .	134	139	143	151	134	140	146	139	136	144	146	140	163	146.5	1
Distance from root of nose to chin . . . . .	83	100	90	100	96	106	111	99	100.5	115	101	98	105	114	1
Distance from root of nose to be- tween lips . . . . .	50	65	61	62	72	66	69	65	68	67	72	68	75	74	1
Width of face . . . . .	108	123	124	123	115.5	127	129	105	119	132	129	123	137	132	1
Height of nose . . . . .	37	41.5	42	35	50.5	51.5	52.5	45.5	48	50	43.5	52	59	54	5
Width of nose . . . . .	28	32	30	28	31.5	35	37	28	31	36.5	35	35.5	34.5	38	
Weight in pounds . . . . .	—	—	46	—	—	—	—	—	—	—	—	—	—	—	—
<i>Indices:</i>															
Height of shoulder . . . . .	76.7	77.1	80.2	75	83.9	82.3	81.7	80.0	79.6	82.9	85.5	82.2	85.5	83.9	80
Index of length of arm . . . . .	41.5	44.1	45.4	48	46.8	44.8	44.0	47.1	46.0	46.4	42.6	44.0	46.4	44.6	46
Index of finger-reach . . . . .	99.9	100.2	101.3	91.1	101.9	101.0	101.6	106.8	99.9	105.4	101.3	102.6	102.3	101.0	101
Index of height, sitting . . . . .	60.5	56.0	54.3	60	51.0	51.1	47.8	53.6	52.9	53.4	52.0	49.4	52.9	—	53
Index of width of shoulders . . . . .	22.8	19.6	24.8	20	19.7	19.1	18.3	20.7	18.9	21.2	16.1	17.9	20.3	—	53
Cephalic index . . . . .	81.2	75.1	81.2	78	74.00	77.8	81.6	76.4	78.6	76.2	78.9	75.7	86.2	16.1	18
Index of upper part of face . . . . .	46.30	52.85	49.19	41	62.60	51.97	53.49	61.90	57.14	50.75	55.81	55.28	54.74	56.06	80
Facial index . . . . .	76.85	81.30	72.58	30	83.47	83.46	86.04	94.28	84.03	87.12	78.29	79.67	76.64	86.36	53
Nasal index . . . . .	75.68	77.10	71.43	06	62.37	73.78	70.47	61.09	64.58	73.00	80.46	67.11	58.47	70.37	73

5	6	7	8	9	10	11	12	13	14	
Tunas (son of No. 33)	Basile Stanislas	Jack ?	Michel (son of No. 36)	Spolot	Gabriel Benoit	George Antoine	Basile (son of No. 33)	Charlie ?	Jim ?	Basile
Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay of Flatbow Lake	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay	Lower Kootenay
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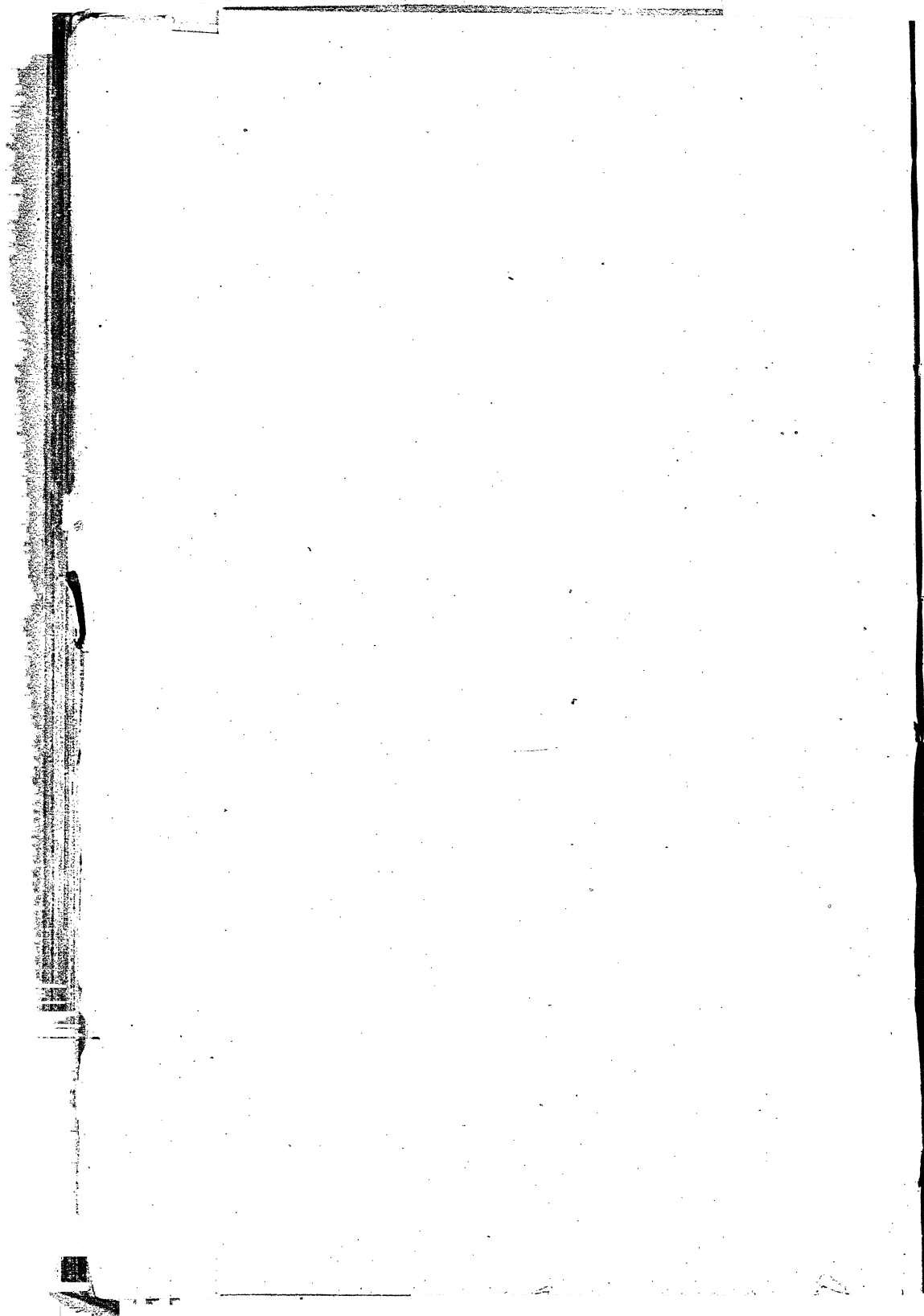
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*Bilqula*

Number	I. Males																			Subject measured by R. Virchow												II. Females								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
Name	Wa'wina	K'oa'q, son of 19 and 39	Qell'gya	Nes	Nalikumi'kuul	Ayuse'ka	Tenqeksalai'u	Am'el'os	Letqumalai'ir	Ad'e'lqem	Anuskina'th'Em	Yiqula'	Ask'e'mlik	Sa'cn	Piky'tumimot	Tpa'knkuit	K'ayutsumlai'u	O'qoso	Temqoqya's	E'sk'el, Mu'iat	Athmenam	Nana'lak'umai	Al'amait	Poippo	Kakilis	Koimam	Nuskolista	Alkius	Yakotlas	Itiurana	Ne'lekma'ishik	Anana'us	Sing'e'l	K'annstioala'-aqista	Tlak'oa'li	Ileaqal'ir	Anuga'u'waks	Sineq'e'm		
Tribe	Talio'ni	Nusk'e'lst	Nuqa'khu	Nuqa'khu	Tsomot'i	Nuqa'khu	Nuqa'khu	Nuqa'khu	Nuql'E'l	Tsomot'i	K'ot'lhna	Nuqa'khu	Nuqa'khu	Nuql'E'l	Nuqa'khu	Satsk	Stai'u	Nuqa'khu	Nusk'e'lst	Nuqa'khu	Nuqa'khu	Satsk	Satsk	Nuqa'khu	?	Nuqa'khu	Taleo'mh	?	Nuqa'khu	?	?	Nuqa'khu	Nuqa'khu	Nuqa'khu	F. Guasila M. Bilqula	Nuqa'khu	Nuqa'khu	Siang'li		
Age	7	14-15	16-17	18	17-18	18	18	19	19-21	19-20	20	20	21	22	25-29-31	30	30	36	35-40	44	45	50-55	20?	23	Old abt. 50	?	19	32?	26?	25?	12	19-20	22	24	25	28-30	32			
Stature	1,171	1,549	1,628	1,601	1,713	1,615	1,689	1,708	1,678	1,734	1,662	1,609	1,587	1,638	1,725	1,603	1,641	1,622	1,685	1,587	1,679	1,670	1,608	1,662	1,743	1,542	1,662	1,728	1,703	1,593	1,687	1,717	1,333	1,552	1,581	1,588	1,525	1,614	1,549	
Finger-reach	1,178	1,638	1,701	1,700	1,803	1,727	1,787	1,808	1,747	1,939	1,797	1,695	1,647	1,796	1,824	1,747	1,742	1,750	1,781	1,756	1,807	1,753	1,743	1,789	1,872	1,618	1,758	1,832	1,730	1,745	1,861	1,333	1,622	1,708	1,666	1,612	1,713	1,607		
Height of seventh vertebra	—	1,310	1,392	1,354	1,450	1,378	1,430	1,462	—	1,482	1,392	1,355	1,327	1,389	—	1,384	1,390	—	—	1,422	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Height of acromion	933	1,259	1,327	1,298	1,403	1,314	1,381	1,381	1,362	1,419	1,345	1,324	1,266	1,326	1,411	1,295	1,340	1,322	1,374	1,279	1,371	1,355	1,314	1,369	1,439	1,255	1,415	1,390	1,288	1,394	1,389	1,041	1,257	1,270	1,308	1,244	1,317	1,260		
Height of point of second finger	421	559	597	571	620	559	594	620	619	581	592	608	552	574	630	543	597	576	619	543	591	604	616	602	640	569	597	603	558	631	577	484	—	530	597	559	578	562		
Width between acromia	260	356	370	381	393	356	378	394	381	400	394	397	376	387	400	381	379	379	384	381	389	384	325	430	390	361	388	376	411	395	286	359	359	321	365	367	346			
Height, sitting	651	819	870	876	889	860	908	936	905	933	895	907	883	851	924	873	927	876	898	889	892	879	814	923	916	831	888	899	834	857	926	743	828	876	855	826	883	834		
Length of arm	512	700	730	727	783	755	787	761	743	838	753	716	714	752	775	752	743	746	755	736	780	751	698	767	799	686	766	787	730	763	812	557	—	740	711	685	739	676		
Length of head	168.5	184	186.5	196	196	185.5	190	195	182.5	190	194	189	193	193	192	189	189	191.5	193	183	201	195	180	188	195	175	183	183	179	181	194	177	180.5	178	182	174	177.5	169		
Width of head	148	166	160	158	154	149.5	164	155	160	159	168	164.5	158	158.5	165	152	152.5	160	165	151	157	157	157.5	168	159	157	148	161	157	156	165	146	155.5	157	151	163	153	157		
Height of ear	128	140	141	144	142	129	146	148	151	141	148	130	150	130	152	130	147	146	134	138	137	133	120	130	121	30	130	123	111	132	133	135	138	131	130	133	127			
Width of face	126	147	147.5	157	146	146	154	150	148	153	157.5	156	149	145	150	141	151.5	150.5	157	149	146.5	157	150	159	154	149	55	152	151	156	164	126	147	149	144	156	138.5	146		
Distance from chin to naso-frontal suture	96	117	125	127	125	130	132	118	126	130	125	122	128	132	126	114	133	130	129	128	128	139	121	126	128	116	23	121	134	130	139	122	118	123	125	119	124	121		
Distance from mouth to naso-frontal suture	61	74	75	80	76	82	81	76	78	83	85	76	81	77.5	81	72	81	83	85	77	79	92	81	79	86	78	82	80	79	82	84	77	76	74	80	78	77	82		
Height of nose	39	53	51.5	55	52	54	59	53	55	56	57	51	57	55	58	51	57	60	62	59.5	59	64	58	60	55	53	56	53	57	59	64	52	51	50	53	57	55	58		
Width of base of nose	25	27	27	32	28	28	31	28	30	32	32	29	30	28	34	31	31	32	33	35	35	35	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Maximum width of nose	31	37	35	41	40	38	39	42	36	37	40	36	37	35	38	35	42	40	40	40	42	38	36	38	42	38	36	39	41	35	48	34	36	33	36	39	33	32		
Cephalic index	87.9	90.2	85.8	80.6	78.6	80.6	86.3	79.5	87.6	83.7	86.6	87.0	81.9	82.2	85.9	80.4	80.7	83.5	86.0	82.5	78.5	85.5	87.5	89.3	81.5	89.7	90.0	88.0	87.7	86.2	85.0	82.5	86.1	88.2	83.0	93.7	86.2	92.4		
Index of height of ear	76.0	76.1	75.6	73.5	72.4	69.5	76.8	75.9	82.7	74.2	76.3	68.8	77.7	67.4	79.2	68.8	77.8	76.2	69.4	75.4	68.7	70.3	73.9	63.8	66.7	69.1	70	71.0	68.7	61.3	68.0	75.1	74.8	77.5	72.0	74.7	74.9	75		
Facial index	76.2	79.6	84.7	80.9	85.6	89.0	85.7	78.7	85.9	85.0	79.4	78.2	85.6	91.0	80.8	80.8	87.8	86.4	82.2	85.9	87.4	88.5	80.7	79.2	83.1	77.8	89.3	79.6	88.7	83.3	84.7	96.8	80.3	82.6	86.8	76.3	89.5	82.4		
Index of upper part of face	48.4	50.4	50.9	51.0	52.1	56.0	52.6	50.7	52.5	54.3	53.7	48.7	54.2	53.5	51.9	51.1	53.5	55.1	54.1	51.7	54.0	58.6	54.0	49.7	55.8	52.4	52.9	52.6	52.3	52.6	51.2	61.1	51.7	49.0	55.6	50.0	55.6	56.4		
Nasal index	79.5	69.8	68.0	74.5	76.9	70.4	66.1	79.2	65.5	66.1	70.2	70.6	64.9	63.6	65.5	68.6	73.7	66.7	64.5	74.8	71.2	59.4	62.1	63.3	76.3	73.7	—	—	—	—	—	—	—	—	—	—	—	—		
Index of base of nose	—	50.9	52.4	58.2	53.8	51.8	52.5	52.8	54.5	57.1	56.1	56.9	52.8	50.9	58.6	60.8	54.4	53.3	53.2	65.4	59.3	54.7	53.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Finger-reach, in per cent.	100.6	105.7	104.5	106.2	105.3	106.9	105.8	105.9	104.1	111.8	108.1	105.3	103.8	109.6	105.9	109.0	106.2	107.9	105.7	110.6	107.6	105.0	108.5	107.6	107.4	104.9	107.7	107.6	108.6	103.4	108.4	100.0	104.5	108.1	104.9	105.6	106.2	103		
Height, sitting, "	55.6	52.9	53.4	54.7	51.9	53.3	53.8	54.8	53.9	53.8	53.9	56.4	55.6	52.0	53.6	54.5	53.5	54.0	53.3	56.0	53.1	52.6	53.0	55.5	52.6	53.9	54.4	54.0	52.4	50.8	53.9	55.7	53.4	55.4	53.8	54.1	54.7	53		
Length of arm, "	43.7	45.2	44.8	45.4	45.7	46.8	46.6	45.6	44.3	48.3	45.3	44.5	45.0	45.9	45.0	46.9	43.3	46.0	44.8	46.4	46.5	45.0	43.5	46.2	45.8	44.5	46.3	46.2	45.8	45.2	41.8	—	46.8	44.8	44.9	45.8	43			

Head deformed.

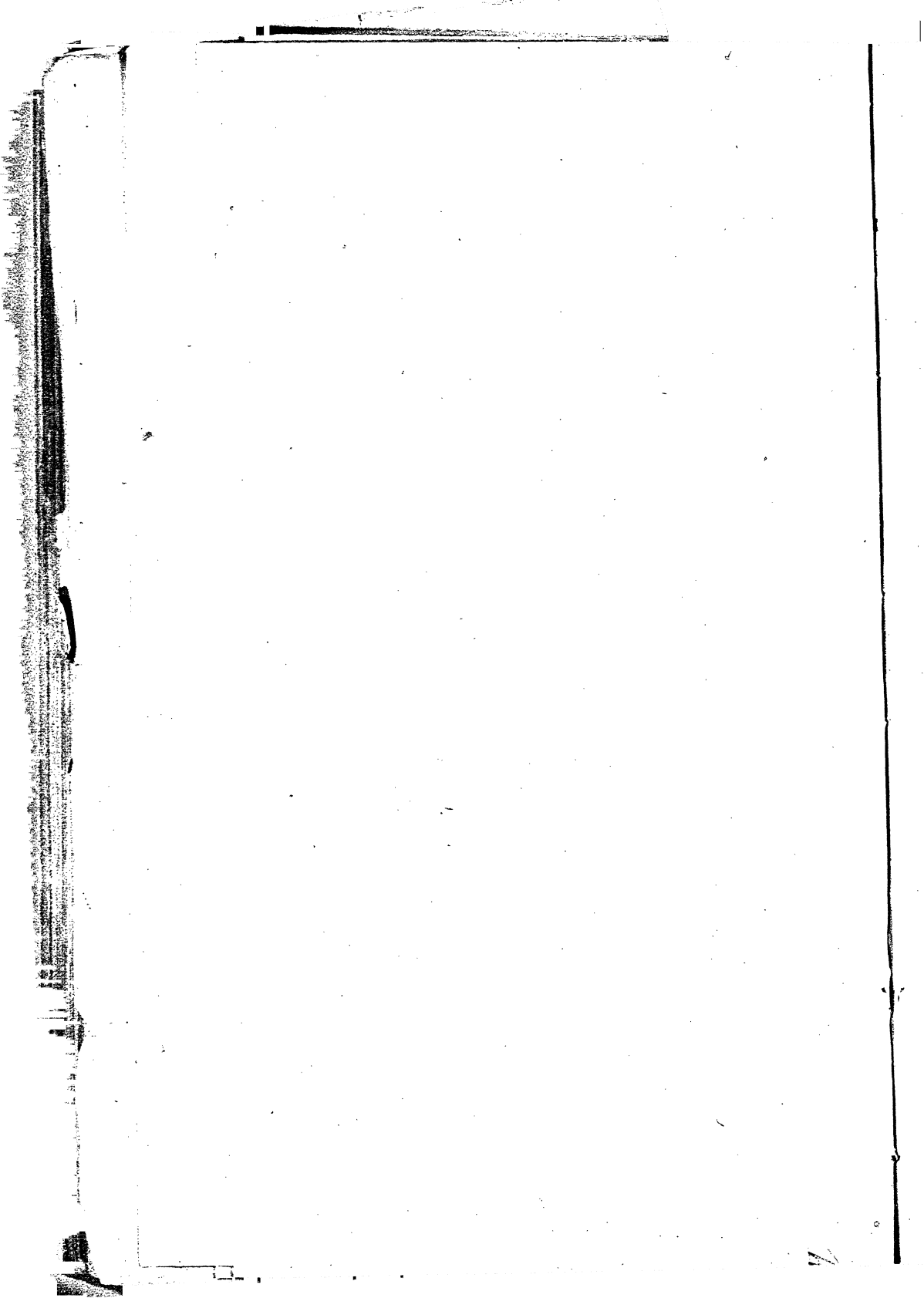




Number	17	18	19	20	21	32	33	34	35
Name	Old Joe	Dominy	Delo Isaac, F. No. 5; mother, No. 25	Lucie, father, No. 12	Mary, mother, No. 29	Celestine	Mary	Anne	Marianne
Tribes	Ft. Douglass	Sq'tein	F. Sq'tein. M. Lil- loog Meadows	Ft. Douglass	Ft. Douglass	Ska'ti	Ft. Douglass	Ka'ten	Ft. Douglass
Age	75	75	3	10	11	50	55	60	60
Stature	mm. 1,625	mm. 1,419	mm. 883	mm. 1,082	mm. 1,381	mm. 1,544	mm. 1,431	mm. 1,327	mm. 1,428
Finger-Height	—	—	—	892	1,171	—	1,175	1,079	1,170
Height	—	1,159	682	857	1,127	—	524	457	498
Height	—	511	305	365	545	—	—	308	318
Height	—	321	201	245	311	—	792	724	736
Width	—	776	495	591	787	—	651	622	672
Height, Length	—	648	377	492	582	—	—	—	—
Length	184	179	162	163	180	178	175	171	176
Width	168	160.5	145	151	152	161	158	144	148
Height	—	129	127	127	112	—	144	143	125
Width	157	141.5	113	123	132	139	142	139	139
Distance sut	125	104	87	91	112	114	109	95	112
Distance sut	80	67	57	58	72	76	76	58	77
Height	58	49	33	40	51	55.5	51	42	51
Width	37	36	23	23	27	33	32	30	33
Maxim	44	43	28	29	33	40	37	37	38
Cephalic Index	91.3	87.2	89.5	92.6	84.3	90.4	90.3	84.2	84.1
Facial Index	79.6	73.5	—	74.0	80.3	82.0	76.8	83.6	80.6
Nasal Index	51.0	47.4	—	47.2	51.5	54.7	53.5	41.7	55.4
Finger-Height	75.9	87.7	84.8	72.5	66.3	72.0	72.5	88.1	74.5
Height, Length	63.8	73.5	70.9	57.5	52.5	59.5	62.7	71.5	64.7
Finger-Height	—	105.5	97.4	106.9	98.9	—	106.7	106.0	108.1
Height, Length	—	54.7	56.0	54.6	57.0	—	55.3	54.5	51.6
Length	—	45.7	42.7	45.5	42.7	—	45.6	47.0	47.1

5. Harrison Lake.

Number	I. Males																		II. Females																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Name	Antoine, son of No. 12	Shillistan, brother of No. 1, son of No. 12	Joseph	Harry Douglass	Adanas	Mac	John	Jack	Francois	Paul	Marcelle	Sä	A'kels	Peter	Lero'eskan	Swä'lämür	Old Joe	Dominy	Delo Lane, F. No. 5; mother, No. 25	Lucie, father, No. 12	Mary, mother, No. 29	Mary Helen	Mathilde	Alia	Lucie	Marianne	Nannie	Margaret	Mathilde	Agnès, mother, No. 31	Millie	Celestine	Mary	Anne	Marianne	
Tribes	Ft. Douglass	Ft. Douglass	Sqteim	Ft. Douglass	Sqteim	Lillooet Meadows	Ft. Douglass	Ft. Douglass	Ft. Douglass	Ft. Douglass	Lillooet Meadows	Ft. Douglass	Ft. Douglass	Ft. Douglass	Ft. Douglass	Ska'ti	Ft. Douglass	Sqteim	F. Sqteim. M. Lillooet Meadows	Ft. Douglass	Ft. Douglass	Ft. Douglass	Ft. Douglass	Ft. Douglass	Lillooet Meadows	Lillooet Meadows	F. Skaullits, M. Lillooet Meadows	Lillooet Meadows	Ft. Douglass	Sqteim	Sqteim	Ska'ti	Ft. Douglass	Kat'en	Ft. Douglass	
Age	12	14	15	23	23	24	27	28	40	40	50	50	53-55	55	65	70	75	75	8	10	11	14	16	19	20	20	20	20	21	30	30!	46	50	55	60	60
Stature	mm. 1,276	mm. 1,527	mm. 1,571	mm. 1,734	mm. 1,590	mm. 1,652	mm. 1,622	mm. 1,644	mm. 1,622	mm. 1,489	mm. 1,568	mm. 1,577	mm. 1,443	mm. 1,454	mm. 1,571	mm. 1,692	mm. (1,625)	mm. 1,419	mm. 883	mm. 1,082	mm. 1,381	mm. 1,438	mm. 1,508	mm. 1,517	mm. 1,539	mm. 1,543	mm. 1,546	mm. 1,581	mm. 1,492	mm. —	mm. 1,433	mm. —	mm. 1,331	mm. 1,327	mm. 1,428	
Finger-reach	1,282	1,562	1,619	1,812	1,678	1,743	1,685	1,753	1,717	1,577	1,668	1,631	1,529	1,574	1,622	1,692	—	1,498	860	1,156	1,359	1,546	1,514	—	1,590	1,609	1,656	1,679	1,527	—	1,474	1,544	1,527	1,406	1,543	
Height of seventh vertebra	—	1,298	—	—	—	1,346	—	—	—	—	—	1,355	—	—	—	—	—	1,159	—	892	1,171	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Height of acromion	1,022	1,238	1,273	1,406	1,295	1,359	1,314	1,343	1,333	1,209	1,292	1,280	1,203	1,178	1,298	—	1,159	682	857	1,127	1,171	—	1,251	1,279	1,257	1,266	1,282	1,225	—	1,168	—	1,175	1,079	1,170		
Height of point of second finger	467	559	591	641	600	629	606	578	583	524	578	583	517	506	584	—	511	305	365	545	524	562	569	592	552	565	569	568	—	528	—	524	457	498		
Width between acromia	277	319	354	399	376	408	328	359	368	330	364	333	322	378	368	318	—	321	201	245	311	321	310	352	340	352	340	368	343	—	343	—	308	318		
Height, sitting	680	814	844	933	844	883	894	867	—	778	835	844	752	756	838	—	776	495	591	787	756	803	828	817	809	787	851	808	—	759	—	792	724	736		
Length of arm	555	679	682	765	695	736	708	765	745	685	714	697	686	672	714	—	648	377	492	582	647	—	682	687	705	—	—	—	—	640	—	651	622	672		
Length of head	167	174	180	195	180	186	181	185	189	180	184	183	175	183	186	177	184	179	162	163	180	178	174	176	170.5	177	183	175.5	178	167	186	178	175	171	176	
Width of head	155	161	157.5	160	164	163	166	161	175	172	162	167	155.5	154	169	172	168	160.5	145	151	152	147	151	164	158	152	150	157	151	151	153	161	158	144	148	
Height of ear	124	141	143	146	141	125	144	145	130	130	127	130	113	133	155	—	129	127	127	118	128	—	122	128	131	125	118	130	—	122	—	144	143	125		
Width of face	129	140	139	147	147	157	158	153	162	155	150	146	142	143	159	156	157	141.5	113	123	139	132.5	137	146	136.5	139	135	145	141	138	144	139	142	139	139	
Distance from chin to naso-frontal suture	160	105	118	122	112	118	119	115	116	107	123	112	105	117	115	116	125	104	87	91	112	102	101	111	119	113	108.5	110	115	99	107	114	109	95	112	
Distance from mouth to naso-frontal suture	64	68	71	76	70	72	76	80	77	69	80	76	68	75	72	72	80	67	57	58	72	62	61	73	78	72	67	68	76	64	67	76	76	58	77	
Height of nose	42	50	48	50	48	48	57	55	53	55	55	55	50	48	51	50	58	49	33	40	51	40	41.5	50	58	48	44	45	54	42	47	55.5	51	42	51	
Width of base of nose	25	31	30	26	28	29	29	29	30	36	28	29	34	28.5	40	34	37	36	23	23	27	28	32	27	24	26	27	29	34	32	27.5	33	32	30	33	
Maximum width of nose	29	36	36	35	36	38	41	35	40	38	39	36	41	33	47	43	44	43	28	29	34	32	36	34	31	35	34	36	39	35	34	40	37	37	38	
Cephalic index	92.8	92.5	87.5	82.1	91.1	87.6	91.7	87.0	92.6	95.6	88.0	91.3	88.9	84.2	90.9	97.0	91.3	87.2	89.5	92.6	84.4	82.6	86.8	93.2	92.6	85.9	82.0	89.7	84.8	89.9	82.3	90.4	90.3	84.2	84.1	
Index of height of ear	74.3	81.0	79.4	74.9	78.3	67.2	79.6	78.4	68.8	72.2	69.0	71.0	64.6	72.7	83.3	—	72.1	74.4	—	77.9	65.7	71.9	—	69.3	75.1	74.0	68.3	67.6	73.0	—	65.6	—	82.3	83.6	71.0	
Facial index	77.5	75.0	84.9	83.0	76.2	75.2	75.3	75.2	71.6	69.0	82.0	76.7	73.9	81.8	72.3	74.4	79.6	73.5	—	74.0	80.6	77.0	73.7	76.0	87.2	81.3	80.4	75.9	81.6	71.7	74.3	82.0	76.8	68.3	80.6	
Index of upper part of face	49.6	48.6	51.1	51.7	47.6	45.9	48.1	52.3	47.5	44.5	53.3	52.1	47.9	52.4	45.3	46.2	51.0	47.4	—	47.2	51.8	46.8	44.5	50.0	57.1	51.8	49.6	46.9	53.9	46.4	46.5	54.7	53.5	41.7	55.4	
Nasal index	69.1	72.0	75.0	70.0	75.0	79.2	71.9	63.6	75.5	69.1	70.9	65.5	82.0	68.8	92.1	80.0	75.9	87.7	84.8	72.5	66.7	80.0	86.8	68.0	53.4	72.9	77.3	80.0	72.2	83.3	72.3	72.0	72.5	88.1	74.5	
Index of base of nose	59.5	62.0	62.5	52.0	58.3	60.4	50.9	52.7	56.6	65.5	50.9	52.7	68.0	59.4	78.4	68.0	63.8	73.5	70.9	57.5	52.9	—	54.0	54.0	41.4	54.2	61.4	64.4	63.0	76.2	58.5	59.5	62.7	71.5	64.7	
Finger-reach, in per cent.	100.5	102.3	103.0	104.5	105.5	105.5	103.9	106.6	105.9	105.9	106.4	103.5	105.9	108.3	103.2	—	—	105.5	97.4	106.9	98.4	107.5	100.4	105.8	103.3	104.3	107.1	106.2	102.3	—	102.9	—	106.7	106.0	108.1	
Height, sitting	53.3	53.3	53.7	53.8	53.1	53.5	55.1	52.7	—	52.2	53.3	53.5	52.1	52.0	53.3	—	—	54.7	56.0	54.6	57.0	53.3	54.6	53.1	52.4	53.8	54.2	54.2	—	53.0	—	55.3	54.5	51.6		
Length of arm	43.5	44.5	43.4	44.1	43.7	44.2	43.6	46.5	45.9	46.0	45.5	44.2	47.5	46.2	45.4	—	—	45.7	42.7	45.5	42.2	—	44.9	44.6	45.7	45.3	45.1	44.0	—	44.7	—	45.6	47.0	47.1		



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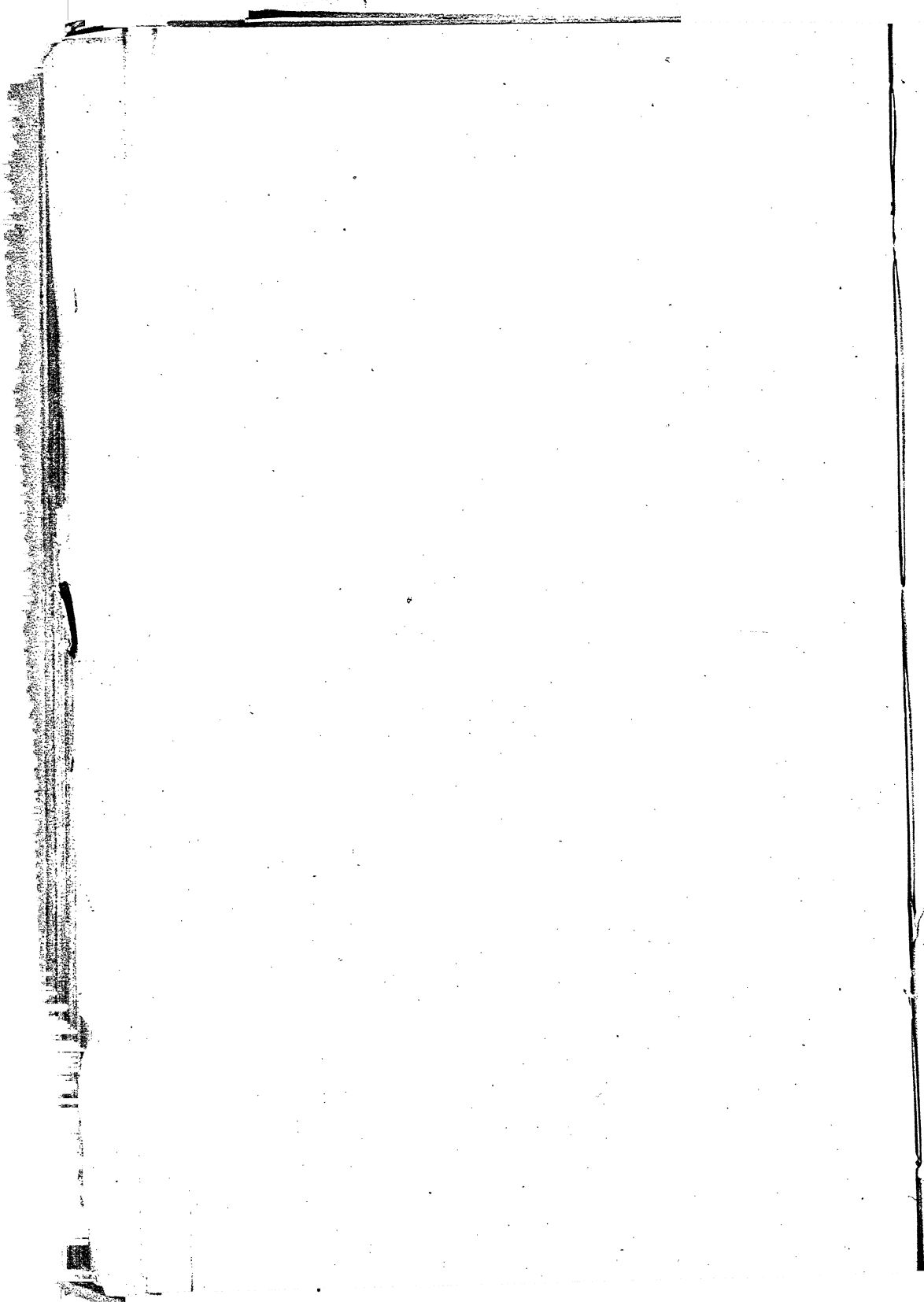
Numl	19	20	21	22	23	235	36	37	38	39
Name	Joe Waue	Jim Williams	Napoleon	Charles Squallie	Mena Lane	Moses Toabson Alice John	Jane George	Louise Johnnie	Marie Rock	Lizzie
Tribe	Kwinautl	Puyallup	F. Puyallup M. White River	Niskwalli	Puyallup	Puyallup Puyallup	F. Puyallup M. Chihalis	Chihalis	Kwinautl	Niskwalli
Age	35	37	40	60	10	118	19	20	20	30
Statur	mm. 1,600	mm. 1,574	mm. 1,660	mm. 1,562	mm. 1,340	mm. 1,351	mm. 1,544	mm. 1,486	mm. 1,601	mm. 1,549
Fingd	1,678	1,638	1,762	1,631	1,308	1,455	1,611	1,568	1,633	1,612
Heigl	1,383	—	1,425	—	1,116	1,10—	1,314	—	—	1,314
Heigl	1,314	1,282	1,378 1,365	1,263	1,057	1,121	1,260	1,205	1,282	1,257
Heigl	587	603	629	562	502	457	539	555	616	545
Width	387	379	406	378	294	343	343	362	368	346
Heigl	898	895	914	867	762	787	867	792	921	841
Length	727	679	736	701	555	664	701	650	666	712
Length	177	185	183	182	172	117	191	175	178	187
Width	173	171	171	166	151	115	150	168	155	150
Height	140	136	130	127	134	113	132	141	132	130
Width	157	149	159	157	127	114	140	153	143	142
Distance	132	123	127	111	105	111	112	114	116	108
Distance	85	76	84	73	68	74	72	72	75	69
Height	60	52	60	53	47	48	49	48	49	45
Width	35	32	35	33	28	29	27	29	26	33
Maximum	40	39	43	41	34	35	33	34	36	38
Cephalic	97.5	92.4	93.5	91.2	87.8	106.8	78.5	96.0	87.1	80.2
Index	67.9	73.5	71.0	69.8	78.5	79.3	69.1	80.6	74.2	69.5
Facial	94.1	82.6	79.9	70.7	82.6	76.5	80.0	74.5	81.1	76.1
Index of	14.1	51.0	52.8	46.5	53.5	45.0	51.4	47.1	52.4	48.6
Nasal	6.7	75.0	71.3	77.4	72.3	77.2	67.3	70.8	73.5	84.4
Index of	3.3	61.5	58.3	62.3	60.6	62.0	55.1	60.4	53.1	73.3
Finger	6.9	104.1	106.1	104.4	97.6	104.2	104.4	105.5	102.0	104.1
Height	6.1	56.9	55.1	55.5	56.9	57.7	56.1	53.3	57.5	54.2
Length	2.4	43.1	43.7	44.9	41.4	42.6	45.3	47.1	41.1	45.9

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## 6. Coast of Washington.

Number	I. Males																				II. Females																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
Name	Daniel Wing	Addie Jim	John Unassina	Joseph Craig	Frank Winger	Eddie Sport	Lincoln Lewis	John Wagner	Tom Santiago	Al. Napoleon	George Kriss	Lewis Charlie	George Wesley	Allen Bob	Adam Jim	Louis Napoleon	William Martin	George Slouane	Joe Wane	Jim Williams	Napoleon	Charles Squallie	Mena Lane	Mary Jackson	Emma Charles	Julia Charlie	Martha Winger	Alice Thompson	Alice Lane	Lucie Taylor	Nellie Jim	Lillie Aitwis	Rosalie Tom	Elisa Santiago	Alice John	Jane George	Louise Johnnie	Marie Rook	Lizzie	
Tribe	Kwinautl	Niskwalli	Puyallup	Puyallup	Puyallup	Puyallup	Chihalis	F. Chihalis M. J. Clatsop, J. Hillaonook	Kitsop	Puyallup	Puyallup	Puyallup	Niskwalli	Muckleshot	Niskwalli	Puyallup	Niskwalli	Puyallup	Kwinautl	Puyallup	F. Puyallup M. White River	Niskwalli	Puyallup	Puyallup	Puyallup	Puyallup	Puyallup	Puyallup	Puyallup	Puyallup	Puyallup	Puyallup	Puyallup	Kwinautl	Kitsop	Puyallup	F. Puyallup M. Chihalis	Chihalis	Kwinautl	Niskwalli
Age	9	11	12	12	12	12	13	13-5	14	14	14	15	16	16	18	19	22	25	33	37	40	60	10	11	11	12	12	12	12	12	12	12-13	14	14	16	18	19	20	20	30
Stature	mm. 1,298	mm. 1,409	mm. 1,340	mm. 1,384	mm. 1,419	mm. 1,406	mm. 1,641	mm. 1,447	mm. 1,530	mm. 1,539	mm. 1,457	mm. 1,519	mm. 1,609	mm. 1,639	mm. 1,685	mm. 1,734	mm. 1,625	mm. 1,689	mm. 1,600	mm. 1,574	mm. 1,660	mm. 1,562	mm. 1,340	mm. 1,390	mm. 1,416	mm. 1,238	mm. 1,489	mm. 1,447	mm. 1,514	mm. 1,479	mm. 1,527	mm. 1,468	mm. 1,412	mm. 1,409	mm. 1,517	mm. 1,544	mm. 1,486	mm. 1,601	mm. 1,549	
Finger-reach	1,298	1,462	1,398	1,428	1,454	1,486	1,732	1,508	1,603	1,582	1,479	1,534	1,657	1,778	1,695	—	1,743	1,784	1,678	1,638	1,762	1,631	1,308	1,468	1,409	1,276	1,530	1,460	1,524	1,476	1,562	1,533	1,441	1,473	1,552	1,611	1,568	1,633	1,612	
Height of seventh vertebra	1,098	1,196	1,124	1,171	1,201	1,194	1,378	1,235	1,300	1,301	1,225	1,263	1,392	1,435	1,441	1,405	1,406	1,473	1,383	—	1,425	—	1,116	1,165	1,209	1,035	1,263	1,232	1,294	1,254	—	—	1,199	—	—	1,314	—	—	1,314	
Height of acromion	1,022	1,114	1,051	1,101	1,143	1,151	1,295	1,165	1,232	1,235	1,171	1,196	1,287	1,368	1,349	1,411	1,304	1,376	1,314	1,282	1,378	1,263	1,057	1,133	1,120	984	1,217	1,181	1,238	1,219	1,224	1,178	1,125	1,133	1,219	1,260	1,205	1,282	1,257	
Height of point of second finger	432	486	450	476	521	489	521	517	549	559	527	514	565	600	608	682	584	630	587	603	629	562	502	488	511	448	546	538	594	565	574	546	505	532	574	559	555	616	545	
Width between acromia	266	316	300	313	311	314	381	328	322	335	324	332	356	356	371	378	406	397	387	379	406	378	294	314	294	280	291	296	318	295	340	322	332	332	308	343	343	362	368	346
Height, sitting	714	781	725	754	746	736	895	787	825	813	794	789	892	889	914	905	879	905	898	895	914	867	762	768	784	676	787	816	787	832	795	752	778	876	867	867	792	921	841	
Length of arm	590	628	601	625	622	662	774	648	683	676	644	682	722	768	741	729	720	746	727	679	736	701	555	645	609	609	643	644	654	650	632	601	645	701	701	701	666	712	712	
Length of head	178	175	166	176	183	179	190	185	179	183	180	189	177	181	184	187	186	186	177	185	183	182	172	164	183	178	180	182	175	177	172	178	165	172	178	191	175	178	187	
Width of head	145	142	147	151	156	154	153-5	155	145	155	151	153	150	153	151	166	156	166	173	171	171	166	151	164	146	145	151	148	151	142	156	153	156	145	157	150	168	155	150	
Height of ear	154	133	131	127	146	133	155	143	128	141	133	167	120	145	136	138	138	135	140	136	130	127	134	130	136	118	130	133	130	139	127	138	132	133	124	130	132	141	132	130
Width of face	132	129	125	129	139	136	140	140	135	143	137	137	139	136-5	140	153	144	159	157	149	159	157	127	147	130	128	134	135	135	130	132	132	133	131-5	147	140	153	143	142	
Distance from chin to naso-frontal suture	107	119	113	110	113	114	123	108	118	115	119	116	115	119	120	129	134	126	132	123	127	111	105	112	113	103	105	108	114	107	114	109	109	105	111	112	114	116	108	
Distance from mouth to naso-frontal suture	76	68	71	66	71	76	79	70	75	73	80	72	75	76	73	83	86	78	85	76	84	73	68	71	69	65	68	70	72	68	75	70	69	67	74	72	72	75	69	
Height of nose	46	44	54	40	47	47	55	42	51	52	50	48	48	52	52	60	56	50	60	52	60	53	47	43	45	42	47	46	49	51	51	51	—	47	48	49	48	45	45	
Width of base of nose	30	26	24	27	33	27	30	27	26	29	32	30	22	31	25	31	30	35	35	32	35	33	28-5	27	26	28	28	26	26	24	28	26	25	26	29	27	29	26	33	
Maximum width of nose	33	32	32	34	35	34	36	33	35	37	38	39	33	37	34	41	36	43	40	39	43	41	34	33	32	34	35	35	34	33	38	31	31	32	35	33	34	36	38	
Cephalic index	81-5	81-1	88-5	85-8	85-2	86-0	80-8	83-8	81-0	84-7	83-9	81-0	84-7	84-5	82-1	88-8	83-9	89-2	97-5	92-4	93-5	91-2	87-8	100-0	79-8	81-5	83-9	81-3	86-3	80-2	90-7	86-0	94-5	84-3	88-2	78-5	96-0	87-1	80-2	
Index of height of ear	86-5	76-0	78-9	72-2	79-8	74-3	81-6	77-3	71-5	77-0	73-9	88-4	67-8	80-1	73-9	73-8	74-2	72-6	79-1	73-5	71-0	69-8	78-5	79-3	74-3	66-9	72-2	73-1	74-3	78-5	73-8	77-5	80-0	72-1	73-0	69-1	80-6	74-2	69-5	
Facial index	81-1	92-2	90-4	85-2	81-3	83-8	81-9	77-1	87-4	80-4	86-9	84-7	82-7	87-5	84-7	84-3	93-1	73-9	84-1	82-6	79-9	70-7	82-6	76-2	86-9	80-4	78-4	80-0	84-4	82-3	86-4	82-6	81-9	79-8	75-5	80-0	74-5	81-1	76-1	
Index of upper part of face	53-2	52-7	56-8	51-2	51-1	55-9	56-4	50-0	55-6	51-0	58-4	52-6	54-0	55-9	52-1	54-2	59-7	49-1	54-1	51-0	52-8	46-5	53-5	49-4	53-1	50-8	50-7	51-8	53-3	52-4	56-9	53-2	51-9	51-0	50-3	51-4	47-1	52-4	48-6	
Nasal index	71-7	72-7	59-3	85-0	74-5	72-3	65-5	78-6	68-6	71-2	76-0	81-3	68-7	71-2	65-4	68-3	64-3	86-0	66-7	75-0	71-3	77-4	72-3	76-7	71-1	81-0	74-5	76-1	69-4	64-7	74-5	60-8	—	68-1	72-9	67-3	70-8	73-5	84-4	
Index of base of nose	65-2	59-1	44-4	67-5	70-2	57-4	54-5	64-3	51-0	55-8	64-0	62-5	45-8	59-6	48-1	50-2	53-6	70-0	58-3	61-5	58-3	62-3	60-6	62-8	57-8	66-7	59-6	56-5	53-1	47-1	54-9	51-0	—	55-3	60-4	55-1	60-4	53-1	73-3	
Finger-reach, in per cent.	100-0	103-7	104-3	103-2	102-5	105-7	105-5	104-2	104-8	102-8	101-5	101-0	103-0	105-3	100-6	—	107-3	105-6	104-9	104-1	106-1	104-4	97-6	105-6	99-5	103-0	102-8	100-9	100-7	99-8	102-3	104-4	102-1	104-6	102-2	104-4	105-5	102-0	104-1	
Height, sitting	55-1	55-4	54-1	54-5	52-5	52-3	54-6	54-4	53-9	52-8	54-4	52-0	55-4	52-7	54-2	52-2	54-1	53-6	56-1	56-9	55-1	55-5	56-9	55-3	55-5	55-5	52-6	54-4	53-2	54-4	53-2	55-2	57-7	56-1	53-3	57-7	56-1	57-5	54-2	
Length of arm	45-4	44-6	44-9	45-1	43-8	47-0	47-2	44-8	44-6	43-9	44-2	44-8	44-8	45-5	43-9	42-0	44-3	44-2	45-4	43-1	43-7	44-9	41-4	46-4	43-1	43-3	45-0	44-4	42-5	44-2	42-6	42-9	43-9	42-6	42-6	45-3	47-1	41-1	45-9	

1 Head deformed





9. Oregonian Timneh.

I. Males

II. Females

Number	I. Males																												II. Females																												
Name	I. Males																												II. Females																												
Tribe	I. Males																												II. Females																												
Age	I. Males																												II. Females																												
Stature	I. Males																												II. Females																												
Finger-reach	I. Males																												II. Females																												
Height of seventh vertebra	I. Males																												II. Females																												
Height of acromion	I. Males																												II. Females																												
Height of point of second finger	I. Males																												II. Females																												
Width between acromia	I. Males																												II. Females																												
Height, sitting	I. Males																												II. Females																												
Length of arm	I. Males																												II. Females																												
Length of head	I. Males																												II. Females																												
Width of head	I. Males																												II. Females																												
Height of ear	I. Males																												II. Females																												
Width of face	I. Males																												II. Females																												
Distance from chin to naso-frontal suture	I. Males																												II. Females																												
Distance from mouth to naso-frontal suture	I. Males																												II. Females																												
Height of nose	I. Males																												II. Females																												
Width of base of nose	I. Males																												II. Females																												
Cephalic index	I. Males																												II. Females																												
Index of height of ear	I. Males																												II. Females																												
Facial index	I. Males																												II. Females																												
Index of upper part of face	I. Males																												II. Females																												
Index of base of nose	I. Males																												II. Females																												
Finger-reach, in per cent.	I. Males																												II. Females																												
Height, sitting	I. Males																												II. Females																												
Length of arm	I. Males																												II. Females																												
Minimum width of forehead	I. Males																												II. Females																												
Distance between gonae	I. Males																												II. Females																												
1	I. Males																												II. Females																												
2	I. Males																												II. Females																												
3	I. Males																												II. Females																												
4	I. Males																												II. Females																												
5	I. Males																												II. Females																												
6	I. Males																												II. Females																												
7	I. Males																												II. Females																												
8	I. Males																												II. Females																												
9	I. Males																												II. Females																												
10	I. Males																												II. Females																												
10-11	I. Males																												II. Females																												
11-12	I. Males																												II. Females																												
11-12	I. Males																												II. Females																												
13	I. Males																												II. Females																												
13	I. Males																												II. Females																												
14	I. Males																												II. Females																												
14-15	I. Males																												II. Females																												
15	I. Males																												II. Females																												
16	I. Males																												II. Females																												
16-17	I. Males																												II. Females																												
19	I. Males																												II. Females																												
21	I. Males																												II. Females																												
21	I. Males																												II. Females																												
22	I. Males																												II. Females																												
23	I. Males																												II. Females																												
23-24	I. Males																												II. Females																												
25	I. Males																												II. Females																												
26-27	I. Males																												II. Females																												
28	I. Males																												II. Females																												
31-32	I. Males																												II. Females																												
32	I. Males																												II. Females																												
33	I. Males																												II. Females																												
34	I. Males																												II. Females																												
40	I. Males																												II. Females																												
40	I. Males																												II. Females																												
46	I. Males																												II. Females																												
46	I. Males																												II. Females																												
56-60	I. Males																												II. Females																												
3	I. Males																												II. Females																												
5-6	I. Males																												II. Females																												
7	I. Males																												II. Females																												
7-8	I. Males																												II. Females																												
8-9	I. Males																												II. Females																												
9	I. Males																												II. Females																												
9	I. Males																												II. Females																												
9-10	I. Males																												II. Females																												
12	I. Males																												II. Females																												
12	I. Males																												II. Females																												
17	I. Males																												II. Females																												
17	I. Males																												II. Females																												
19	I. Males																												II. Females																												
19	I. Males																												II. Females																												
20-22	I. Males																												II. Females																												
22	I. Males																												II. Females																												
23	I. Males																												II. Females																												
25	I. Males																												II. Females																												
37-40	I. Males																												II. Females																												
60	I. Males																												II. Females																												

328 sagittal cir.; 223 vert. circ. 175 from ophryon. 195 from ophryon.









*Index of upper part of face of Males.*

Tribes	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	Number of Cases
Northern tribes and Vancouver Island																			15
Bilqula						2	2		1	1		2		1	2	1	1		29
Fraser River					1	1	1	5	8	3	5	3	1		1				7
Harrison Lake	1	1			1		2	1		1	2								9
Washington					1	1		1	1		2					1			5
Columbians								4	1	2	1		1						9
Northern Oregon					1	1	1	1	2										7
Oregonian Timneh						1	4	1	2	1	4	2	1	2	1			1	20
Crosses between Oregonian Timneh and Californians							1					1	1	1					4
Northern Californians					1	1		1			2	1		1					7

*Index of upper part of face of Females.*

Bilqula						1	1	1				2	1						6
Harrison Lake			3			1	1	1		2				1					9
Washington				1			1	2	1										6
Northern Oregon												2							2
Oregonian Timneh					1	1	2	1		1	1			1					7

*Finger-reach of Males.*

Tribes	Per cent.													Number of Cases		
	99	100	101	102	103	104	105	106	107	108	109	110	111		112	113
Northern tribes and Vancouver Island	—	—	1	1	—	—	5	2	1	1	1	—	1	—	1	13
Bilqula	—	—	1	1	2	2	5	1	5	4	2	1	1	—	—	25
Fraser River	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	3
Harrison Lake	—	—	—	—	2	1	4	2	—	—	—	—	—	—	—	9
Washington	—	—	—	—	—	3	1	1	2	—	—	—	—	—	—	6
Columbians	—	—	—	1	—	4	1	1	2	—	—	—	—	—	—	8
Northern Oregon	—	—	1	—	1	1	1	2	1	—	—	—	—	—	—	7
Oregonian Tinneh	—	—	3	2	4	3	2	1	1	1	—	—	—	—	—	17
Crosses between Oregonian Tinneh and Californians	—	—	—	—	3	—	—	2	—	—	—	—	—	—	—	6
Northern Californians	—	—	—	2	1	1	—	1	—	—	—	—	—	—	—	5

*Finger-reach of Females.*

Tribes	Per cent.													Number of Cases		
	99	100	101	102	103	104	105	106	107	108	109	110	111		112	113
Bilqula	—	—	—	—	1	2	1	1	—	1	—	—	—	—	—	6
Harrison Lake	—	—	—	2	1	1	1	1	1	—	—	—	—	—	—	7
Washington	—	—	—	2	—	3	1	—	—	—	—	—	—	—	—	6
Northern Oregon	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	3
Oregonian Tinneh	1	1	—	3	1	2	1	—	—	—	—	—	—	—	—	9

*Height, sitting, of Males.*

Tribes	Per cent.										Number of Cases
	50	51	52	53	54	55	56	57	58	59	
Northern tribes and Vancouver Island	—	1	—	4	3	4	—	—	—	—	12
Bilqula	1	1	4	9	5	2	3	—	—	—	25
Fraser River	—	—	—	—	—	3	—	—	—	—	3
Harrison Lake	—	—	2	5	—	1	—	—	—	—	8
Washington	—	—	1	1	1	2	2	—	—	—	7
Columbians	—	—	2	2	3	2	—	—	—	—	9
Northern Oregon	—	—	—	—	2	4	1	—	—	—	7
Oregonian Tinneh	—	—	—	5	6	4	2	—	1	—	18
Crosses between Oregonian Tinneh and Californians	—	—	1	3	—	1	1	—	—	—	6
Northern Californians	—	2	1	3	1	—	—	—	—	—	7

*Height, sitting, of Females.*

Tribes	Per cent.									Number of Cases	
	50	51	52	53	54	55	56	57	58		59
Bilqula	—	—	—	3	2	1	—	—	—	—	6
Harrison Lake	1	—	1	4	2	—	—	—	—	—	9
Washington	—	—	—	1	1	1	2	2	—	—	7
Northern Oregon	—	—	1	—	—	2	—	—	—	—	3
Oregonian Tinneh	—	—	1	1	3	3	—	—	—	—	8

*Length of arm of Males.*

Tribes	Per cent.									Number of Cases
	41	42	43	44	45	46	47	48	49	
Northern tribes and Vancouver Island . . . . .	—	—	2	3	8	1	—	—	1	15
Bilqula . . . . .	—	1	1	5	10	6	1	1	—	25
Fraser River . . . . .	—	—	1	—	—	1	—	1	—	3
Harrison Lake . . . . .	—	—	2	3	2	2	—	—	—	9
Washington . . . . .	—	1	2	2	1	—	—	—	—	6
Columbians . . . . .	—	—	3	1	4	1	—	—	—	9
Northern Oregon . . . . .	—	1	2	3	1	—	—	—	—	7
Oregonian Tinneh . . . . .	—	3	1	8	3	1	—	1	—	17
Crosses between Oregonian Tinneh and Californians . . . . .	—	—	1	3	—	1	1	—	—	6
Northern Californians . . . . .	—	—	2	3	—	2	—	—	—	7

*Length of arm of Females.*

Tribes	Per cent.									Number of Cases
	41	42	43	44	45	46	47	48	49	
Bilqula . . . . .	—	—	1	2	1	1	—	—	—	5
Harrison Lake . . . . .	—	—	—	4	3	—	—	—	—	7
Washington . . . . .	1	2	—	—	2	—	1	—	—	6
Northern Oregon . . . . .	—	1	—	3	—	—	—	—	—	4
Oregonian Tinneh . . . . .	—	1	1	6	1	—	—	—	—	9

We will direct our attention to the maximum of frequency in each of these series. It will then appear that in several of the groups two maxima occur, or are, at least, indicated. The principal maximum in each series is indicated by bold type.

Tribes	Stature in cm.			
Northern tribes and Vancouver Island . . . . .	—	153-165	—	—
Bilqula . . . . .	—	158-163	166-72	—
Fraser River . . . . .	—	—	—	—
Harrison Lake . . . . .	about 146	156-164	—	—
Washington . . . . .	—	—	—	—
Columbians . . . . .	—	162-166	—	173-177
Northern Oregonians . . . . .	—	158-162	166-170	—
Oregonian Tinneh . . . . .	—	160-170	—	—
Crosses between Tinneh and Northern Californians . . . . .	—	about 163	—	—
Northern Californians . . . . .	—	about 161	—	—

Tribes	Cephalic Index			Facial Index		
Northern tribes and Vancouver Island . . . . .	77-81	83	—	—	78-81	82-85
Bilqula . . . . .	80-82.5	85-88	—	—	78-81	83-86
Fraser River . . . . .	—	84-87	—	—	—	—
Harrison Lake . . . . .	—	82-84	87-92	about 75	—	81-84
Washington . . . . .	80-82	83-87	—	—	—	—
Columbians . . . . .	—	—	—	—	—	—
Northern Oregonians . . . . .	—	83-85	—	—	—	—
Oregonian Tinneh . . . . .	80-82	84-87	—	—	—	82-87
Crosses between Tinneh and Northern Californians . . . . .	about 79	about 87	—	—	—	—
Northern Californians . . . . .	79-81	—	—	—	—	83-86

This table gives a clue to the understanding of the types of the

various tribes. In looking over the figures given for the Bilqula, it appears that in the three cases considered here, two maxima of frequency occur, while cases between the two maxima are quite rare. Furthermore, it will be seen that the secondary maximum of this series coincides very nearly with the maximum of the first group, embracing the northern tribes and those of Vancouver Island. The cephalic indices do not coincide quite so well as the other measurements, but still sufficiently nearly. The primary maximum of the Bilqula agrees very closely with that of the Oregonian Tinneh. It appears that the stature of the latter varies more than that of the Bilqula, but I shall show later on the cause of this curious fact. The resemblance of the two maxima of frequency to the types of the Coast Indians and of the Tinneh is very far-reaching. As this comparison is entirely based on the occurrence of the two maxima among the Bilqula, it is desirable to show their actual existence more evidently. For this purpose I have divided the whole series of the Bilqula into two parts according to the order of the observations.

*Bilqula.*

Stature			Cephalic Index			Facial Index		
Cm.	Nos. 4-17	Nos. 18-32	Cm.	Nos. 1-16	Nos. 17-32	Cm.	Nos. 4-17	Nos. 18-32
154-157	—	1	78, 79	2	1	76, 77	—	1
158-161	5	3	80, 81	4	3	78, 79	2	3
162-165	2	1	82, 83	2	2	80, 81	3	1
165-169	3	6	84, 85	2	3	82, 83	—	3
170-173	4	3	86, 87	5	4	84, 85	5	3
174-177	—	1	88, 89	—	3	86, 87	1	2
			90, 91	1	—	88, 89	1	2
						90, 91	1	—

It appears from this table that the distribution of cases in the two halves of the series remains unchanged.

The explanation of these phenomena must be sought for in the mixture of the two types of people: the coast people of shorter stature, and with longer heads, and the Tinneh with shorter heads and of taller stature. We know that a mixture of these two people has taken place among the Bilqula. We even know, based on linguistic considerations, that the Bilqula must have lived at one time with the Salish tribes farther south-east. Therefore the explanation given here appears quite plausible.

While coming to these conclusions, I read a preliminary notice of the anthropological investigations carried on in Baden ('Globus,' vol. lix. p. 51), in which the same point is brought out most clearly. O. Ammon, who reports on these investigations, states that in the case of a mixture of types no middle forms originate, but that the parent forms are preserved separately. The same fact has been brought out by Dr. von Luschan in his investigations in Lycia. ('Reisen in Lykien,' &c., Vienna, 1889.) He found that among the Greeks of that country the Shemitic and Armenian types are preserved without having undergone any mixture. If we study among the Bilqula the individual distribution of observations, it appears that the types of the component forms which appear so clearly in a statistical treatment of the material, appear in all possible combinations among the single individuals, so that each indivi-

dual, as we might express it, is a mechanical mixture of the features of the parent types. He may have the face of a Tinneh, and the stature or head of a Coast Indian, and *vice versa*. This important fact also tallies exactly with Ammon's conclusions on the blonde and brunette population of Baden, and confirms the views which Kollmann expressed in 1883. ('Archiv für Anthropologie,' xiii. 79, 179; xiv. 1.) The fact that these conclusions have been arrived at independently on entirely independent material seems to give them great strength.

When we turn to a consideration of the Oregonian Tinneh, we shall find the same phenomena, although apparently somewhat obscured. Instead of two distinct maxima, we find here a great number of cases distributed equally over a long interval. The next northern group differs but little from the Tinneh, but their southern neighbours show quite a marked contrast, particularly regarding their cephalic index. If we assume the Oregonian Tinneh to be a mixture of the two, and keep the fact in mind that no middle forms originate, the form of the curve explains itself easily. In looking at the crosses between the two groups, their distribution according to the maxima of the two component groups is brought out most strikingly, notwithstanding the small number of cases.

In order to ascertain in how far these assumptions are justified, we will subdivide the material in a different way. If the Oregonian Tinneh contain a Californian element, we may assume that it is more prevalent in the south than in the north. For this reason we will arrange the material in the following groups: South of Rogue River, North of Rogue River, and crosses between the two. We will compare preliminarily the measurements from Northern Oregon with those of the group north of Rogue River.

*Cephalic Index.*

Tribes	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
North of Rogue River	1	—	—	—	—	1	4	1	4	3	5	4	1	—	2	1
Northern Oregon	—	—	—	1	—	—	—	—	2	1	1	—	1	—	—	1

*Stature.*

Tribes	152, 153	154, 155	156, 157	158, 159	160, 161	162, 163	164, 165	166, 167	168, 169
North of Rogue River	—	—	2	—	2	2	—	3	2
Northern Oregon	—	—	—	1	1	1	—	2	2

It appears that the two groups are quite homogeneous, so that we may be allowed to combine them. Thus we obtain the following table:—

*Cephalic Index.*

Tribes	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
South of Rogue River	—	—	1	3	4	7	4	3	—	2	3	—	1	—	1	1	—
Crosses	—	1	—	1	—	1	—	1	1	1	1	—	1	1	1	2	1
North of Rogue River	1	—	—	1	—	1	4	1	6	4	6	4	2	—	2	2	—



*Stature.*

Tribes	152, 153	154, 155	156, 157	158, 159	160, 161	162, 163	164, 165	166, 167	168, 169	170, 171
South of Rogue River	—	1	2	—	3	3	4	2	—	—
Crosses	1	—	—	1	—	—	—	—	—	1
North of Rogue River	—	—	2	1	3	3	—	5	4	—

It appears from these tables, particularly from that of the cephalic indices, that the individuals south of Rogue River are similar to the Northern Californians. But we also recognise distinctly in the series the secondary maximum belonging to the Oregonian Tinneh. In the same way we see that the tribes north of Rogue River are much more homogeneous, but recognise a secondary maximum corresponding to the Northern Californians. The table brings out exactly what might be expected: a greater admixture of Californian blood in the south than in the north. It is also important to note that the crosses in all these cases appear more variable than the individual races. This is what must take place if the crosses contain both the component types, and are not arranged around a middle type. The measurements, in the two groupings discussed above, give the following ranges of variation:—

Tribes	Range of Cephalic Index	Number of Cases	Range of Stature	Number of Cases
Oregonian Tinneh . . . .	17	57	10	19
Crosses . . . . .	13	6	7	6
Northern Californians . . . .	5	8	7	6
North of Rogue River . . . .	16	34	7	18
Crosses . . . . .	16	13	10	3
South of Rogue River . . . .	14	30	7	15

If the crosses and the component groups were equally variable, we ought to expect much narrower limits of variation among the former, as they embrace only a few individuals; while actually their ranges of variation equal or exceed those of the purer tribes.

I believe all these points, taken in connection with the results of Dr. von Luschan and O. Ammon, prove beyond a doubt the fact that in a mixture of tribes the component types remain unaltered.

The tables of finger-reach, height (sitting), length of arm, do not bring out these relations, because their ranges are almost the same among all the tribes, and therefore intermixture cannot be detected in the compound tribe.

We will try to explain the observations based on these considerations. Among the Bilqula, in Washington, and throughout Oregon, we find a type present of a stature, ranging from 166 to 172 cm., with a cephalic index of from 84 to 87, and a facial index of from 83 to 86. Among the Bilqula, and in Oregon, this is the prevailing type, while in Washington

it is of secondary importance. In all these regions Tinneh are the main mass of the population. They were present in Washington, and form a considerable element among the Bilqula. Therefore it must be assumed that this type represents the Tinneh of the Pacific Coast. We do not know much on the physical characteristics of the Tinneh east of the mountains. But according to Petitot they are tall ('Dictionnaire de la langue Déné-Dindjé,' p. xxi). Quatrefages and Hamy ('Crania Ethnica,' p. 470) mention seven skulls of Tinneh, and find them to be brachycephalic. Both these facts tally with what we found on the Pacific Coast. I had occasion to question a number of former officers of the Hudson Bay Company regarding the general appearance of the Tinneh of the interior of British Columbia, and of the Mackenzie Basin. According to their descriptions, they resemble the tribes of the North-West Coast much more closely than the Algonquin. The complete absence of dolichocephali—at least according to the present state of our knowledge—distinguishes the Tinneh most clearly from the eastern groups of Americans, the Algonquin and Iroquois, as well as the eastern and central Eskimo, so that I am inclined to class them as one of the Pacific peoples. This view is supported by linguistic and ethnological evidence, which, however, it is not the place to discuss here (see 'Journal of American Folk-Lore, vol. iv. p. 13, ff.). It is worth mentioning that the Tlingit of Alaska, who have intercourse with the Tinneh, appear also to be taller and more brachycephalic.

The tribes of the northern parts of the coast of British Columbia appear to be of shorter stature, ranging from 159 to 162 cm., and have much more elongated heads. They are mesocephalic, the index ranging from 77 to 81. We find the same type present, although to a lesser degree, in Washington and on Fraser River, as well as among the Bilqula. It appears to be absent in Oregon, but, remarkably enough, reappears as we approach California. Still farther south true dolichocephali appear. I cannot discover any difference of type between the northern tribes and those of Vancouver Island. This conclusion, drawn from measurements of living subjects, is confirmed by measurements of skulls from this region.

I published in the 'Verh. der Berliner Ges. f. Ethn.,' 1890, p. 30, measurements of a series of ten undeformed crania from Vancouver Island. All of them were obtained from a burial ground near Victoria, and belong, therefore, probably to the Lkuñgen tribe. I reproduce the cephalic and facial indices here for comparison. Besides these, No. III. of the Songish crania, described on p. 17 of the Fifth Report of the Committee, may be made use of. To these may be added a skull described by Flower ('Catalogue of the Specimens illustrating the Osteology,' &c., in the Museum of the Royal College of Surgeons, p. 148), which belongs to the West Coast of Vancouver Island, and another from the head of Alberni Channel, from the Museum of the Geological Survey of Canada. Furthermore, I add a series of measurements of slightly deformed crania from various parts of Vancouver Island from my own collection; the Tsimshian skulls, described on p. 16 of the Fifth Report; three Tsimshian skulls described by Barnard Davis, and another, described by the same author as a 'round head,' from Vancouver Island ('Thesaurus Craniorum,' p. 229). Finally, I add a Haida cranium, which I measured in the Provincial Museum of Victoria. The numbers given here are those of the catalogues of the various collections.

		Lkuŋgen crania											
		1 ♂	2 ♂	3 ♂	4 ♀?	5 ♀	6 ♀	7 ♀?	8 ♂	9 ♂	10 ♀	11 Inf.	12 Inf.
Cephalic Index		76·4	77·7	80·1	77·0	81·1	77·4	78·8	74·6	74·9	78·5	81·8	76·4
Facial Index		79·9	—	86·6	93·5	85·7	—	92·6	—	—	99·2	—	—

		III. 5th Rep.	Nootka		Cowitchin	Comox		Salmon River		Nimkish	
			Flower	Geol. Sur.	94	109	111	113	122	123	135
Cephalic Index		85·8	77·4	81·2	78·0	79·6	81·6	78·9	77·4	78·2	79·5
Facial Index		—	—	—	—	—	—	—	—	—	—

		Kwakiutl		Tsimshian 5th Rep., p. 16				Barnard Davis				Haida ♀
		140	142	1 ♂	II. ♂	III. ♀	IV. ♂	1,022	1,023	1,024	1,211	—
Cephalic Index		81·7	75·8	76·7	78·2	76·7	83·0	79	76	78	76	82·4
Facial Index		—	—	92·1	—	—	—	—	—	—	—	—

Or arranged in a series :

Indices		74	75	76	77	78	79	80	81	82	83	84	85
Skulls.		2	1	6	5	7	3	1	5	1	1	—	1
Living		2	2	1	2	3	—	—	2	—	1	—	—

For the purpose of comparison I have added the indices of the living subtracting two from each [according to Broca] in order to make them comparable to the skulls. The close correspondence between the two groups becomes at once apparent.

It is of interest to investigate the further distribution of this form of head. Turning to the interior of British Columbia we have a series of skulls from Lytton, which were described in the Fifth Report. To these may be added one from the same place which is in my own collection, and has an index of 77·4. All these skulls have suffered somewhat by post-mortem deformation.

72	73	74	75	76	77	78	79	80	81	82
1	—	—	1	—	1	1	—	2	—	2

This series agrees very closely with that of the coast tribes. Measurements of the long bones from the same place show that the tribe must have been a very short one, probably resembling also in this respect the coast people.

Besides these, we have the measurements of two Shushwap crania in Davis's collection (p. 226), which have indices of 76 and 83. A single Shushwap, whom I measured at New Westminster, had an index of 82·9, corresponding to about 81 on the skull. It seems, therefore, that these people resemble the coast tribes, but further investigations are necessary to prove this theory.

Among the other groups, the tribe of Harrison Lake is particularly

remarkable. The prevailing type is exceedingly brachycephalic and chamæprosopic, and their small stature is also quite unique. Their difference from all the other tribes appears so clearly from our tables that further remarks seem unnecessary. I have not found any analogy among the neighbouring tribes, except at the mouth of Fraser River, where the same type might be expected to occur on account of the intermarriage of these groups. The question regarding the relationship of this tribe must remain at present an open one.

Among the other tribes the Columbians appear remarkable on account of their tallness. It seems that their heads are a little longer than those of the neighbouring tribes, but the data do not bring out the difference with sufficient clearness. There appears to be no reason to suppose that more favourable conditions prevailed in this region, and should have produced the development of greater stature.

We will finally consider the proportions of the bodies of the various groups. It appears that the finger-reach of the southern groups, especially of those of southern and central Oregon, is much smaller than that of the northern tribes. I am inclined to attribute this fact to a difference of occupation, the first-named two groups living on reservations, while the others are fishermen. Together with this lengthening of the finger-reach seems to go an increase in the length of the arm. These variations may be seen in females as well as in males. The women pass also much of their time in the canoe, which explains the corresponding variation in their sex. The table also shows that the trunk of these Indians is much longer than that of Europeans and also longer than that of the Iroquois, which, according to Gould, is 53.4 per cent. It seems that the trunk of the southern group is a little longer than that of the northern ones.

I will finally sum up the results of this investigation. We find an almost homogeneous population on the coast of British Columbia, with the exception of the region of Dean Inlet. It is characterised by a stature ranging between 159 and 162 cm.; a cephalic index ranging between 77 and 81, a facial index ranging between 78 and 81. At Bentinck Arm and in Washington this type is mixed with another, which also prevails in Oregon, so far as it is inhabited by Tinneh. This type is characterised by a stature ranging between 166 and 172 cm.; a cephalic index ranging between 84 and 87, and a facial index of from 83 to 86. In Northern Oregon this type is found quite pure. Farther to the south the type is mixed with that of the northern Californians, which becomes the more prevalent the farther south we go. In Washington the same type seems to exist, but subordinate to it the northern type is found. It is the primary element among the Bilqula. We consider this type to be peculiar to the Tinneh. The type of northern California is characterised by a stature ranging from 160 to 164 cm.; a cephalic index of from 79 to 81, and a facial index of from 83 to 86. On the whole this type resembles the first so much that I am inclined to identify them. A third and a quite unique type is found at Harrison Lake. The individuals are short, with very wide faces and heads. There is no similar tribe known to exist in this region, and their affinities appear doubtful. On Columbia River we find a fourth type, remarkable for its tallness, with a cephalic index of from 80 to 84. I believe that these may be identified with the tall tribes of the interior, but further evidence is required on this point.

*Errata in the Sixth Report of the Committee.*

- Page 52, line 43, *instead of* K'oi'kyaqtēnoq *read* K'oi'kyaqtēnoq.  
 " 54, " 15, " Ts'E'ntsēnHk'aiō *read* Ts'E'ntsēnHk'aiō.  
 " 64, " 8 of footnote, *instead of* Ts'ētsā'ēka. Generally *read* Ts'ētsā'ēka, generally.  
 " 65, " 33, *instead of* sā'latlila *read* sā'latlila.  
 " 66, " 5, " hā'mats'a following *read* hā'mats'a, following.  
 " 66, " 50, " k'uē'k'ntse *read* k'uē'k'utsē.  
 " 71, " 33, " Hā'li'kyilatl *read* Hā'ilikyilatl.  
 " 71, " 49, " Ts'ētsā'ēka *read* Ts'ētsā'ēka.  
 " 73, " 13, *omit* Newette.  
 " 73, " 21, *instead of* ts'e'tseqk'enqēlis *read* ts'ē'tseqk'enqēlis.  
 " 73, song I, line 3, *instead of* Hamats'a's *read* Hamats'a's.  
 " 76, " VII., last line, *instead of* Si'siutlkyas *read* Si'siutlkyas.  
 " 79, " VIII., first line, *instead of* Ts'e'k'oa *read* Ts'e'k'oa.  
 " 83, line 14, from *much more usually* to end of paragraph is a footnote following the next paragraph, to be signed G. M. Dawson.  
 " 86, lines 16 to 18, by G. M. Dawson.  
 " 88, lines 9 and 12, *instead of* wandering *read* meandering.  
 " 88, line 34, *instead of* lower *read* fore.  
 " 106, " 8 of table, *instead of* mātltsmō'ts'utl *read* mātltsmō'ts'utl.  
 " 107, in table, possessive pronoun, last line, fifth column, *instead of* qents *read* qenuq.  
 " 108, in table at head of page, 2nd line, 4th column, *instead of* ō'mduqsē *read* ō'mpuqsē.  
 " 109, in table, read under thy father, near person addressed, *instead of* au'mmpuqs *read* au'mpuqs.  
 " 110, line 31, *instead of* ua'qpitse *read* ua'qpisē.  
 " 110, " 40, " ak'ā'stla *read* nak'ā'stla.  
 " 111, " 4 following table, *instead of* tlelūmas'utlenu'qūtl *read* tlelūmasutlenu'qūtl.  
 " 111, footnote 5, second line, *instead of* is *read* are.  
 " 114, line 26, *instead of* tēs *read* t'ēs.  
 " 116, " 35, " —ks *read* —k's.  
 " 117, " 1, " dialect *read* dialect h.  
 " 120, " 12, " wahā'k *read* wohā'k.  
 " 121, " 32, " hiscitlak'latah *read* hiscitlak'tlatah.  
 " 122, " 5, " k'agsapā'minic *read* k'agsapā'minic.  
 " 122, " 3, last table, *instead of* hiscianitic *read* hiscianitic.  
 " 122, " 58, *instead of* māptqasath *read* māptaqsath.  
 " 123, " 31, " bush *read* beach.  
 " 126, " 53, " t'ō't'ōa *read* t'ō't'ōa.  
 " 128, " 6, below table, *instead of* hñitl *read* hñitl.  
 " 130, " 6, *instead of* (n)ē-(ē)c *read* (n)ē-(ē)tc.  
 " 130, " 11, " k'āik'ēietlten *read* k'ā'ik'ēietlten.  
 " 131, " 48, " kotō't *read* kolō't.  
 " 132, " 6, " tiksā'ha *read* tiksā'la.  
 " 132, " 23, " antsā'wa *read* ntsā'wa.  
 " 139, " 7, " sqā'qōū *read* sqā'qaa.  
 " 139, " 29, " sē'sentsa *read* sē'sentsa.  
 " 143, column mother, dialect 15, *instead of* skēqedā'a *read* skēqedzā'a.  
 " 145, " face, " 3, " ts'al " ts'al.  
 " 145, " head, " 16, " —k'ēn " k'ēn.  
 " 145, " nose, " 13, " nE'k'sen " nē'k'sen.  
 " 146, " body, " 15, " meā'tc " meZā'tc.  
 " 147, " finger, " 12, " snE'qtses " snE'qtses.  
 " 148, " blood, " 2, " gā'i " g'ā'i.  
 " 149, " bow, " 3, " haukta'k' " haukta'k'.  
 " 149, " star, " 3, " p'ia'ls " piā'ls.  
 " 151, " sea, " 3, " mān " mān'.  
 " 152, " valley, " 7, " nut'E'l " nutl'E'l (gorge).

Page	152,	column	leaf,	dialect	2,	instead of	tleya'ñigual	read	tlyya'ñigual.
"	153,	"	salt,	"	14,	"	ts'alt	"	ts'alt.
"	153,	"	deer,	"	2,	"	g'at	"	g'at.
"	154,	"	white,	"	1,	"	tlēdi'qatē'	"	tlēdi'qatē'.
"	155,	"	bird,	"	15,	"	spEzō'ō	"	spEzō'zō.
"	155,	"	fish,	"	17,	"	k'āk.qu'lq	"	k'āk.qu'lq.
"	155,	"	light blue,	"	1,	"	ts'ōyi'qatē	"	ts'ōyi'qatē.
"	155,	"	great,	"	15,	"	qEō'm	"	qEzō'm.
"	156,	"	strong,	"	2,	"	diākuya'	"	dakuya'.
"	156,	"	he,	"	5,	"	hē	"	hēt.
"	157,	"	dead,	"	15,	"	ō'uk	"	zō'uk.
"	158,	"	near,	"	9,	"	dje'ē'djimit	"	dje'djimit.
"	159,	"	six,	"	8,	"	t'aqaniā'ē	"	t'aqamiā'ē.
"	162,	"	to kill,	"	15,	"	ok's	"	zōk's.
"	163,	"	to lie down,	"	18,	"	a'k'qka	"	g'a'k'qka.