The North-Western Tribes of Canada.—Eleventh Report of the Committee, consisting of Professor E. B. TYLOR (*Chairman*), Mr. CUTHBERT E. PEEK (*Secretary*), Dr. G. M. DAWSON, Mr. R. G. HALIBURTON, *and* Mr. HORATIO HALE, *appointed to investigate the Physical Characters, Languages, and Industrial and Social Conditions of the North-Western Tribes of the Dominion of Canada.*

THE Committee were originally appointed at the Montreal Meeting of the Association in 1884, and, as indicated in the Tenth Report, presented last year at the Ipswich Meeting, it had been determined that that Report should conclude the series. When, however, it was decided to hold the meeting for 1897 in Toronto, it appeared to be appropriate that the work of the Committee begun at the first Canadian Meeting should be concluded at the second, and the Committee were accordingly continued. The concluding Report of the Committee to be prepared for the Toronto Meeting may afford the occasion of pointing out to the Government and public of Canada the necessity for further and systematic investigation of the ethnology of the country.

The Report presented herewith contains a number of observations by Dr. Franz Boas, through whose agency the greater part of the work has been done, chiefly supplementary to articles contained in the Fifth and Tenth Reports. Although the result of previous journeys by Dr. Boas, these have not been heretofore published.

It is now hoped to include in the final Report of 1897 the results of further field work in contemplation and to be directed toward the filling of some gaps still existing in our general knowledge of the tribes of British Columbia, particularly in respect to the anthropometric observations, which, in Dr. Boas' hands, have already yielded results of so much interest.

Sixth Report on the Indians of British Columbia. By FRANZ BOAS.

The following pages contain notes that were collected by me on previous journeys to the North Pacific coast. They supplement mainly the data on the Kwakiutl Indians, given in the Fifth Report of the Committee, and those on the Nass River Indians in the Tenth Report of the Committee.

There still remain two important gaps in our general knowledge of the ethnology of the North Pacific coast. In order to fill these, further anthropometric investigations on the Haida and Hē'iltsuk· and ethnological and linguistic researches among the Hē'iltsuk· would be required. When these have been added to the data gathered heretofore, it will be possible to give a fairly satisfactory general outline of the anthropology of British Columbia.

I. NOTES ON THE KWAKIUTL.

The Kwakiutl tribes speaking the Kwakiutl dialect call themselves by the general name of *Kwā'kwakyewak'*. The following notes refer to this group, more particularly to the tribes living at Fort Rupert.

THE SHAMANS.

The shamans are initiated by animals, supernatural beings, or by inanimate objects. The killer whale, the wolf, frog, and black bear are the most potent animals which have the power of initiating shamans. The cannibal spirit Baqbakuālanuqsī'waē (see Fifth Report, p. 54), the warrior's spirit Winā'lagyilîs, the fabulous sea bear Nā'nîs, the sea monster Mē'koatEm or K·elk·'ā'yuguit, the ghosts, the hemlock-tree, and the quartz may also initiate them. Shamans who were initiated by the killer whale or by the wolf are considered the most powerful ones. Only innocent youths can become shamans.

A person who is about to become a shaman will declare that he feels ill. For four days or longer he fasts in his house. Then he dreams that the animal or spirit that is going to initiate him appeared to him and promised to cure him. If he has dreamt that the killer whale appeared to him, he asks his friends to take him to a small island; in all other cases he asks to be taken to a lonely place in the woods. His friends dress him in entirely new clothing, and take him away. They build a small hut of hemlock branches, and leave him to himself. After four days all the shamans go to look after him. When he sees them approaching, he begins to sing his new songs and tells them that the killer whale—or whatever being his protector may be—has cured him and made him a shaman by putting quartz into his body. The old shamans place him on a mat, and wrap him up like a corpse, while he continues to sing his songs. They place him in their canoe, and paddle home. The father of the young person is awaiting them on the beach, and asks if his child is alive. They reply in the affirmative, and then he goes to clean his house. He must even clean the chinks of the walls, and he must take particular care that no trace of the catamenial flux of a woman is left in any part of the house. Then he calls the whole tribe. The singers arrange themselves in the rear of the house, while the others sit around the sides. For a few minutes the singers beat the boards which are laid down in front of them, and end with a long call: yoo. This is repeated three times. Then the new shaman begins to sing in the canoe, and after a short time he appears in the house, dressed in head-ring and neck-ring of hemlock branches, his eyes closed, and he dances, singing his song. Four times he dances around the fire. During this time the singing master must learn his song. After the dance the new shaman leaves the house again and disappears in the woods. In the evening the people begin to beat the boards and to sing the new song of the shaman which they had learned from him in the morning. Then he reappears and dances again with closed eyes. This is repeated for three nights. On the fourth night when the people begin to sing for him he appears with open eyes. He wears a ring of red cedar bark, to which a representation of the animal that initiated him is attached. He carries a rattle on which the same animal is carved. He looks around, and says to one of the people: 'You are sick.' It is believed that the shaman can look right through man and see the disease that is in him. Then he makes his first cure.

The power of shamanism may also be obtained by purchase The intending purchaser invites the shaman from whom he is going to buy the power and the rest of the tribe to his house. There the people sing and the shaman dances. During his dance he throws his power into the purchaser, who falls down like one dead, and when he recovers is

taken by the shaman into the woods, where both stay for four days. Then he returns, and the same ceremonial is performed that has been described before.

When the shaman has singled out a person whom he declares to be sick, he proceeds with the following performance: He carries a small bundle of bird's down hidden under his upper lip. He lets the sick person lie down, and feels his body until he finds the seat of the disease. Then he begins to suck at the part where the sickness is supposed to be seated, while the people beat the boards and sing his song. Three times he endeavours to suck out the disease, but in vain. The fourth time, after having sucked, he puts his hands before his face and bites the inside of his cheek so that blood flows and gathers in the down that he is carrying in his mouth. Then he takes it unnoticed from his mouth, and hides it in his hands. Now he begins to suck again, holding his hands close to that part of the body where the disease is supposed to be seated. Then he removes them, blows on them, and on opening his hands the bloody ball of down is seen adhering to the palm of the shaman. After a short while he closes his hands again, applies them once more, and shows one or four pieces of quartz, which he is supposed to have removed from the body of the sick person. Then he closes his hands again, and upon a renewed application produces the feathers, which he declares to be the soul of the patient. He turns his hands palm downward, so that the ball adheres to his hand. If it becomes detached and falls down, it signifies that the patient will die an early death. If the ball adheres, he will recover.

For four months the shaman continues to make cures similar to the one described here. Every fourth day he must bathe. After this time people whom he treats are expected to pay him for his services.

It is forbidden to pass behind the back of a shaman while he is eating, because it is believed that he would then eat the soul of the person passing him in this manner. The person as well as the shaman would fall in a swoon. Blood flows from the shaman's mouth, because the soul is too large for him and is tearing him. Then the clan of the person whose soul he has swallowed must assemble and sing the song of the shaman. The latter begins to move, and vomits blood, which he tries to hold in his hands. After a short time he opens his palms, and shows a small bloody ball, the soul which he had swallowed. Then he rises, while the person whose soul he had swallowed is placed on a mat in the rear of the house. The shaman goes around the fire, and finally throws the soul at its owner. Then he steps up to him, blows upon his head, and the person recovers. It is said that the shaman in this case also bites his cheek and hides some bird's down in his mouth, which soaks up the blood and is made to represent the soul. The person whose soul was swallowed must pay four or five blankets for the harm he has done to the shaman, and for his own cure.

The protector of a shaman informs him if an epidemic should be about to visit the tribe. Then he warns the people, and in order to avert the danger lets them go through the following ceremony. He resorts to a lonely place in the woods for one day. In the evening the people assemble in his house and beat the boards three times. When they begin to beat the boards the fourth time, he enters, wearing a large ring of hemlock branches. It is believed that the souls of unborn children and also those of deceased members of the tribe are hanging

on the branches of the ring, ten to each branch. He talks to them, and brushes them off from the ring. When he enters another shaman goes to meet him, and strews bird's down on to the ring and on the shaman's head. Then the latter walks around the fire, and stays in the rear of the house. Now every member of the tribe must go to him, and he 'puts them through the ring.' The person who is thus cleansed must extend his right hand first, and put it through the ring, which is then passed over his head, and down along the body, which is wiped with the ring. When the ring has almost reached the feet of the person, the latter must turn to the left, and step out of it with his right foot first, turn on that foot, take out the left foot and turn once more to the left, standing on the left foot. Every member of the tribe is made to pass through the ring. It is believed that this is a means of preventing the outbreak of the epidemic. Sick persons must pass through the ring four times. Nobody is allowed to speak or to laugh during this performance. After the shaman has finished, he speaks to the people, making statements intended to show them that he knows even their most secret thoughts.

The shaman wears his neck-ring of red cedar bark all the time.

Powerful shamans are able to transform stones into berries.

Their dance is so powerful that the ground gives way under their steps, and they disappear underground.

Songs of Shamans.

1. *Song of Shaman, initiated by the Killer Whale.*

1. *K·oē'k·'ulagyīlakyastlōq* *hai'ligyaiūkoastlasa* *nau'alakuē* *wahai*
Making alive means of healing from this supernatural being wahai
ēhē' nau'alakuē.
ēhē' supernatural being.

2. *Gyilgyildōguilakyastlē* *hai'ligyaiūkoaqsō* *nau'alakuē* *wahai*
Making life long means of healing from this supernatural being wahai
ēhē' nau'alakuē.
ēhē' supernatural being.

3. *Gyā'gyayapalayūqdōq* *nau'alakuēkoaqsō* *nau'alakuē* *wahai*
Going along under water supernatural being from this supernatural being wahai
ēhē' nau'alakuē.
ēhē' supernatural being.

4. *Sī'sowapalayūqdōq* *nau'alakuē* *wahai ēhē'* *nau'alakuē.*
Made to paddle under water supernatural being wahai ēhē' supernatural being.

Translation.

1. He received the power of restoring to life from the supernatural being.
2. He received the power of lengthening life from the supernatural being.
3. His supernatural helper gave him the power to travel under water.
4. His supernatural helper gave him the power to paddle along under water.

2. *Song of Shaman, initiated by the Killer Whale.*

1. *K·oē'k·'ulagyīlakyastlōq* *nau'alakua.*
Life-maker real this supernatural being.
2. *K·ā'ꜱelētlīlayatlōq* *nau'alakua.*
Making walk this supernatural being.
3. *Ts'ē'tltsāk'uēk·īlayatlōq* *nau'alakua.*
Making life short this supernatural being.

TRANSLATION.

1. My supernatural power restores life.
2. My supernatural power makes the sick walk.
3. My supernatural power cuts life short.

3. *Song of Shaman, initiated by the Wolf.*

1. *Laistalī'sʜlayūqdōqs gyi'lgyildōguilatlaiʜdē k'auq nau'alak hai tlō'koala.*
Made to go around the world by making life long past the supernatural being hai magic.

2. *To-istā'lisʜlayūqdōqs gyi'lgyildōguila'laiʜdē k'auq nau'alak hai tlō'koala.*
Made to walk around the world by making life long past the supernatural being hai magic.

3. *Mā'tʜla ōnō'guā'yaskai gyi'lgyildōguilatlaiʜdē k'auq nau'alak hai tlō'koala.*
Ahead I the poor one making life long past the supernatural being hai magic.

TRANSLATION.

1. The one who makes life long made me go all around the world, the supernatural being.
2. The one who makes life long made me walk all around the world, the supernatural being.
3. The one who makes life long placed my poor self ahead of all, the supernatural being.

4. *Song of Shaman, initiated by Baqbakuālanuqsī'waē.*

1. *Ai, hai'alikyilaamqdʜ nō'guaia k'oā'nastēs Baqbakuālanuqsī'waē, dō'k'ula.*
Ai, healing all the time I wildness of Baqbakuālanuqsī'waē, behold !
2. *Ai, qoā'q'ulagyīyäitkyas ōnō'gua k'oā'nastēs Baqbakuālanuqsī'waē, dō'k'ula.*
Ai, saving life I wildness of Baqbakuālanuqsī'waē, behold !

TRANSLATION.

1. Behold ! I am able to heal by the power of the wildness of Baqbakuālanuqsī'waē.
2. Behold ! I save lives by the power of the wildness of Baqbakuālanuqsī'waē.

5. *Song of Shaman, initiated by the Echo.*

1. *Yāhau, hē'ilikyayatlōq gyi'lgyildōguilaqs hēilikyayuqdē haus tlō'koalakyas'ō.*
Yāhau, healing with making life long with means of healing of the magician real.

2. *ʜīyak'āyatlōq gyi'lgyildōguilaqs ʜēyak'ayōqda haus tlō'koalakyas'ō.*
Blowing water with making life long with means of blowing water of the magician real.

TRANSLATION.

1. Yāhau. The power that makes life long lets me heal with the means of healing.
2. Yāhau. The power that makes life long lets me blow water with the means of blowing water.

BIRTH.

The husband of an *enceinte* woman in the seventh month of pregnancy prepares to insure an easy delivery by collecting the following four medicines : four tentacles of a squid, a snake's tail, four toes of a

toad, and seeds of *Peucedanum leiocarpum*, Nutt. If the birth should prove to be hard, these objects are charred, powdered, and drunk by the mother. The toad's toes are also moved downward along her back. This is called 'making the child jump' (*dâ'yuqstē*). It is worth remarking that *Peucedanum leiocarpum* is used as a powerful medicine also by the Salish tribes of Vancouver Island (see Sixth Report of the Committee, 1890, p. 25), who call the plant k·Eqmē'n, while the Kwakiutl call it *k·'aqmē'n*. Judging from the form of the word, I think that it is rather Salish than Kwakiutl. Certainly the belief in the power of this plant was transmitted from one tribe to the other.

During the period of pregnancy the husband must avoid to encounter squids, as this would have the effect of producing a hard delivery.

When the woman is about to be confined, she leaves the house accompanied by two of her friends who are to assist her. The latter dig a hole in the ground, and one of them sits down on the edge of the hole, stretching her legs across it so that her feet and the calves of her legs rest on the opposite edge. Then she spreads her legs, and the woman who is about to be confined sits down on her lap, straddling her legs so that both her feet hang down in the pit. The two women clasp each other's arms tightly. The third woman squats behind the one who is about to be confined, pressing her knees against her back and embracing her closely, so that her right arm passes over the right shoulder, her left arm under the left arm of her friend. The child is allowed to lie in the pit until after the afterbirth has been borne. Then the navel string is tied and cut, and the child is taken up.

For four days the afterbirth is kept in the house. A twig of yew wood about four inches long is pointed and pushed into the navel string, which is then tied up. Four layers of cedar bark are wrapped around the afterbirth. That of boys is in most cases buried in front of the house-door. That of girls is buried at high-water mark. It is believed that this will make them expert clam-diggers. The afterbirth of boys is sometimes exposed at places where ravens will eat it. It is believed that then the boys will be able to see the future.

The navel string is believed to be a means of making children expert in various occupations. It is fastened to a mask or to a knife, which are then used by a good dancer or carver, as the case may be. Then the child will become a good dancer or carver. If it is desired to make a boy a good singer, his navel string is attached to the baton of the singing master. Then the boy calls every morning on the singing master while he is taking his breakfast. The singing master takes his baton and moves it once down the right side of the boy's body, then down the left side; once more down the right side, and once more down the left side. Then he gives the child some of his food. This, it is believed, will make him a good singer.

I referred in the Fifth (p. 51) and Sixth (p. 62) Reports to the beliefs in regard to twins. I have received the following additional information in regard to this subject. Four days after the birth of twins, mother and father must leave the village and resort to the woods, where they stay for a prolonged period. They separate, and each must pretend to be married to a log, with which they lie down every night. They are forbidden to touch each other. They must not touch their hair. Every fourth day they bathe, rub their bodies with hemlock twigs, and wipe them with white shredded cedar bark. Their faces are painted red all the time. For this purpose they do not use vermilion, but ochre. They are not allowed

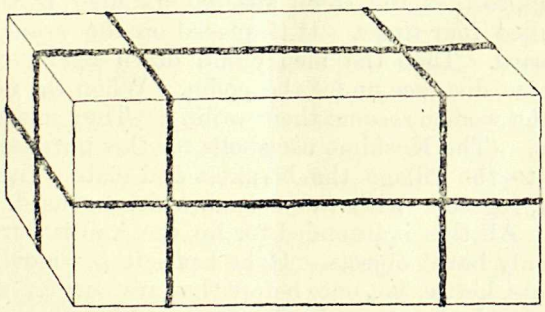
to do any work. These practices are continued for a period of sixteen months. During this period they must not borrow canoes or paddles from other people; they must use bucket and dishes of their own. If they should use the belongings of other persons, the latter would have also twin children. The woman must not dig clams and the man must not catch salmon, else the clams and the salmon would disappear. They must not go near a fire in which bracken roots are being roasted. It is believed that the birth of twins will produce permanent backaches in the parents. In order to avert this, the man, a short time after the birth, induces a young man to have intercourse with his wife, while she in turn procures a girl for her husband. It is believed that then the backache will attack them. A year after the birth of the twins the parents put wedges and hammers into a basket, which they take on their backs and carry into the woods. Then they drive the wedges into a tree, asking it to permit them to work again after a lapse of four months.

All the young women go to the pit over which the twins were born and squat over it, leaning on their knuckles, because it is believed that after doing so they will be sure to bear children.

BURIAL.

When a person is about to die, his friends spit water all over his body. After death the body is carefully washed, so that every particle of the bodies of the survivors that might adhere to the corpse may be removed. Even the places where their breath might have touched the body must be carefully washed. This is done in order to prevent that the survivors might accidentally bewitch themselves (see Sixth Report, p. 60). If the death occurs during the night, the body is left in the house until daylight; if it occurs during the day, it is removed at once. It must not be taken out of the door, else other inmates of the house would be sure to die soon. Either a hole is made in one of the walls, through which the

FIG. 1.



body is carried out, or it is lifted through the roof. It is placed behind the house to be put into the box that is to serve as a coffin. If it were placed in the coffin inside the house, the souls of the other inmates would enter the coffin too, and then all would die. The coffin is placed at the right-hand side of the body. Then a speaker calls the relatives of the deceased, saying: 'Let the dead one take away all the sickness of his friends.' Then they all come and sit down at the side of the corpse, wailing for a short time. Now they arise and give the body a kick. They turn once toward the left, and give the body another kick, repeating this

action four times. This is called 'pushing away the love of the deceased,' that he may not appear in their dreams, and that his memory may not trouble them.[1] Then the wife of the deceased lets the children take off their shirts and sit down, turning their backs towards the corpse. She takes his hand and moves it down the backs of the children, then moving the hand back to the chest of the body. With this motion she takes the sickness out of the bodies of the children and places it into the body of the deceased, who thus takes it away with him when he is buried.

After this ceremony an olachen net is placed over the head of the body, his face is painted red. and the body is wrapped in a blanket. Then it is tied up, the knees being drawn up to the chin. Now four men of the clans of which the deceased was not a member lift the body to place it into the box. Four times they raise it. The fourth time they actually lift it over the box. Four times they move, but only the fourth time they actually let it down into the box. If the box should prove too small, they must not take it out again, but the body is squeezed in as best they can, even if they should have to break its neck or feet. The head is placed at the edge where the sides of the box are sewed up (see Fifth Report, p. 20) because the soul is believed to escape through the joint. The soul leaves the body on the fourth day after death, escaping through the place where the frontal fontanel of the child is located. The box is tied up, as indicated in fig. 1. As soon as the four men who carry the coffin to the burial-ground raise it the women cease to wail, because their tears would recall the deceased. The relatives are not allowed to attend the funeral, as it is believed that their souls would stay with that of their dead friend. Twelve women accompany the coffin. Children are not allowed to go with it. When the tree on which the body is to be deposited has been reached, four poor men are sent up to carry a rope by which to haul up the coffin. When they have reached the branch on which the coffin is to be placed, they lower the rope. The men who remained below pretend three times to tie the rope to the coffin. The fourth time they really tie it. Then the men in the tree pull up the rope. Three times they rest in pulling it up, so that the coffin reaches its final resting-place after having been pulled four times. It is placed on the branch and covered with a large board. Then the men climb down again, cutting off the branches for some distance under the coffin. When the men come down from the tree, the women resume their wailing. They scratch their cheeks with their nails. (The Koskimo use shells for this purpose.) After they have returned to the village the blankets and mats which the deceased used are burnt, together with the objects which he used. Food is also burnt for him. All this is intended for his use, and is burnt because the dead can use only burnt objects. If he has left a widow, she must use his blankets, mats, kettle, &c., once before they are burnt. After the death of a woman the widower must do the same. After four days a person belonging to another clan cuts the hair of the mourners. The hair is burnt. This service is paid for heavily, because it is believed to shorten the life of the one who has rendered it. The climbers receive a payment of two blankets each; those who placed the corpse in the coffin and carried it to the burial-ground receive one blanket each for their services.

[1] The widow and the children of the deceased wear strings made of mountain-goat wool and white cedar bark mixed, one around the neck, one around the waist, and two connecting ones down the chest; also strings of the same material around wrists, elbows, knees, and ankles.

Chiefs and common people were buried on separate trees. There is also a separate tree on which twins are buried.

Nowadays the bodies are mostly buried in small grave-houses. The custom of raising the coffin three times before it is placed in its final resting-place is still adhered to.

The customs of the Koskimo and Tlatlasiqoala differ somewhat from those of the Kwakiutl. They place the body in the box in the house. Before doing so the box is turned round four times. Then a hole is cut into the bottom of the box with an axe, which is raised three times before the hole is really cut. This is the breathing hole of the soul, which does not die or escape until the fourth day after the death of the body. The coffin, before it is carried to the burial-ground, is placed on the beach.

The Kwakiutl paint twins, before they are buried, red all over. Four feathers are attached to the coffin. Nobody is allowed to wail for them. The surviving twin is washed in the water with which the corpse of the dead one was washed.

When a person dies by an accident, and his body is not recovered, a grave is made for him, which consists simply of painted boards. The saying is that, if this were not done, it would be as though a dog had died. Nobody is allowed to walk behind such a grave, as by doing so he would indicate his desire to lie in a grave.

The widow, particularly if she has many children, must undergo a very rigorous ceremonial. On the evening of the third day after the death of her husband, her hair is cut. At the same time a small hut is built for her. It is made of the mats which were hanging around the bed of the deceased. The roof is made of the boards which were placed over his bed in order to keep the soot off. An old woman, preferably one who has been a widow four times, is appointed to assist her. On the fourth morning after the death of her husband, she must rise before the crows cry. She is not allowed to lie down, but must sit all night with her knees drawn up to her chest. She eats only four bites four times a day, and drinks only four mouthfuls four times a day. Before taking water or food she raises it three times. If she thinks that her husband has been murdered, she takes her food up, saying that it is the neck of her husband's enemy, and calling his name, she bites it four times. Then she throws it into the fire, saying : 'This will be your food when you are dead.' That means that the person whom she named must soon die. When she is tired she stretches her legs, first the one, then the other, naming her enemy. This is also believed to bring him death. After four days the old woman washes her and wipes her with a ring of hemlock branches, as described above. This is repeated four times in intervals of four days. After the last washing her old blanket is hung over the stump of a tree, and her hat, which she wears all the time, is hung on top of the stump. Then she is given new clothing, and is taken back to the house. There she must stay in one corner, where she has a small fire of her own. Her children are not allowed to see her. When she leaves the house, she must pass out of a small door of her own. Four times she must turn before putting her foot in the doorway. Four times she must put her foot forward before actually going out, and in the same manner she returns. The old woman now washes her every sixth day, and rubs her with the ring of hemlock branches. After the fourth washing she is permitted to come to the fireplace, but she must avoid going around the fire. Now the old woman washes her every eighth day, and then four times more every

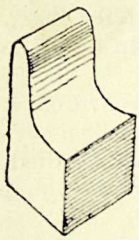
twelfth day. Thus the whole period extends over one hundred and twenty days.

If the woman is poor, and has many children, four washings in intervals of ten days are substituted for the washings of the last eighty days, thus reducing the whole period to eighty days. During all this time she must not cut her hair. She does not wail during the first sixteen days of the mourning period while she is confined in the small hut.

GAMES.

1. *Ēibayu.*—These dice have the shape indicated in fig. 2. The casts count according to the narrowness of the sides. This game is also played by the Tlingit of Alaska.

FIG. 2.



2. *Tl'E'mkoāyu.*—A stick, about three feet long, with a knob at its end, is thrown against an elastic board, which is placed upright at some distance. If the stick rebounds and is caught, the player gains four points. If it rebounds to more than half the distance from the player to the board, he gains one point. If it falls down nearer the board than one-half the distance, or when the board is missed, the player does not gain any point. The two players throw alternately. Each has ten counters. When one of them gains all the counters, he is the winner of the stake. When the stick falls down so that the end opposite the knob rests on the board, the throw counts ten points.

3. *Ā'laqoa*, the well-known game of lehal, or hiding a bone; played with twenty counters.

4. *T'ē'nk·oayu*, or carrying a heavy stone on the shoulder to test the strength of those who participate in the game.

5. *Mō'k·oa.*—This game was introduced from the Nootka. It is played between tribes. An object is given to a member of one tribe, who hides it. Then four members of another tribe must guess where it is. They are allowed to guess four times. If they miss every time, they have lost. This game is played for very high stakes.

VARIOUS BELIEFS AND CUSTOMS.

In seal feasts the chest of the seal is given to the highest chief; the feet are given to those next in rank. The young chiefs receive the flippers, and the tail is given to the chief of the rival clan, who must give a feast in return. The hunter, before returning home, cuts off the head of the seal and gives it to his steersman. He eats the kidney before going home, and cuts a strip three fingers wide along the back. These customs are said to have been instituted by *Ō'maqt'ā'latlē*, the ancestor of the clan *Gyī'gyilk·am* of the *K·'ō'moyuē*.

The lowest carving on a totem pole is that which the owner inherited from his father. The higher ones are those which he obtained by marriage.

The hunter, before going out to hunt seals or sea-otters, or other sea animals, rubs his whole canoe with the branches of the white pine, in order to take away all the bad smell that would frighten away the animals.

In order to secure good luck, hunters of sea animals bathe in the sea before starting. Hunters of land animals bathe in fresh water. Both rub their bodies with hemlock branches.

Of the first halibut caught in the season the stomach is eaten first, then the pectoral fins, next the head. The rest is divided. If this were not done, the halibut would disappear.

Hunters carve the figure of any remarkable animal that they have killed on the butts of their guns, or on their bows.

The souls of hunters are transformed into killer whales; those of hunters who pursue land animals become wolves. Only when a killer whale or a wolf dies can their souls return and be born again. Hunters have the bow seat of their canoes ornamented, and a hole cut in the centre of the seat. It becomes their dorsal fin when they become killer whales after their death. It is believed that, after the death of a hunter, the killer whale into which he has been transformed will come to the village and show itself. When a great number of killer whales approach a village, it is believed that they come to fetch a soul.

Not only hunters are transformed into killer whales. I was told that at one time a killer whale had been killed, the flipper of which showed a scar as though it had been burnt. Not long before this event a girl had died who had at one time burnt her hand. She was identified with the killer whale.

When a wolf has been killed, it is placed on a blanket. Its heart is taken out, and all those who have assisted in killing it must take four morsels of the heart. Then they wail over the body:

Âlawēstens hēgyōsō qens nemōqtsēqdē—*i.e.*, Woe! our great friend.

Then the body is covered with a blanket and buried. A bow or a gun with which a wolf has been killed is unlucky, and is given away by the owner. The killing of a wolf produces scarcity of game.

Wolf's heart and fat are used as medicines for heart diseases (see Sixth Report, p. 61).

Women are forbidden to touch a wolf, as else they would lose their husbands' affections (see Sixth Report, p. 61).

The screech owl is believed to be the soul of a deceased person. The Indians catch them, paint them red, and let them free, asking for long life.

The root of the bracken (*Pteris aquilina*, L.) is believed to know everything that is going on in the house in which it is being roasted. It must be treated with great respect. If a person should warm his back at the fire in which it is being roasted, he will have backache. Parents of twins, and people who have had sexual intercourse a short time previously, must not enter a house in which the roots are being roasted.

When a person dreams that he goes up a mountain and the latter tilts over, it signifies that he will die soon.

The gum of the red pine is chewed. That of the white pine is not used by girls, because it is believed to make them pregnant.

The world is described as a house. The east is the door of the house; the west is the rear of the house. North is called 'up the river,' south 'down the river.' In the north of the world is the mouth of the earth. There the dead descend to the country of the ghosts.

The part of the beach immediately to the west of Fort Rupert, in front of the place where formerly the village of the sub-tribe Kuē'qa stood, is called the village of the ghosts, who are believed to reside there from time to time.

When there is an eclipse of the sun a man, named *Bā'wulē*, is required to sing :—

Hōk·oai', hōk·oai', hōk·oalai', ā'tlas lalaq ts'ā'ya laqsgya Bāwulē'—
Vomit it, vomit it, vomit it, else you will be the younger brother of Bāwulē'.

In order to gain the love of a girl the following philter is used : The tongues and gizzards of a raven and of a woodpecker are placed in a hollow stick, together with some saliva. They are mixed with the latter ; the tube is closed and worn under the blanket. The underlying idea was explained to me thus : The woodpecker and the raven are pretty birds ; therefore the girl will consider the man who wears them just as pretty and attractive.

The tongue of a snake or of a frog is also used as a philter. They are believed to make the wearer irresistible to everybody.

Another philter is as follows : The man wears a snake skin on his body for some time. About the month of August he gathers a root called *tl'ē'tayas*, which resembles in shape two people embracing each other. He procures four hairs of the girl whom he loves, which, together with four hairs of his own, he places between the two portions of the root which resemble the two people. The root is tied up with sinews taken from a corpse, and wrapped in the snake-skin which the man has been wearing. For four days after, the man must not look at the girl. Then she will call him, but he must not follow her. Finally she will come to him.

In order to bewitch a person it is necessary to obtain some of his soiled clothing, hair, or blood. I described some methods of witchcraft in the Sixth Report (p. 60). The following method is also used : The clothing of the enemy is placed in the mouth of a lizard, the head of which has been cut off. Then a snake's head is pulled over the lizard's head, so that the latter is in the mouth of the snake. The whole is placed in the mouth of a frog, which is then sewn up. This bundle is tied as tightly as possible with the sinews of a corpse, and placed inside a stick which has been hollowed out, and is then tied up again with the sinews of a corpse. The whole is then covered with gum. This package is placed on the top of a hemlock-tree which is growing at a windy place. In winter this method of witchcraft does not do much harm, but as soon as it grows warm the victim must die.

If a person is believed to be bewitched (*ē'k·a*) his body is rubbed with white cedar bark, which is then divided into four parts, and buried in front of four houses, so that the people when entering or leaving the house must step over it. This will break the spell.

If the children of a couple always die while very young, the little finger of the last child to die is wound with a string. A notch is cut in the upper rim of the burial box, in which the finger is placed. Then the cover is put on, and the finger is cut off. It is hidden in the woods that nobody may find it. The body of the child is placed on a new tree, not on the tree on which other children are put.

II. The Houses of the Tsimshian and Nîsk·a'.

The houses of the Tsimshian and of the Nîsk·a' are square wooden structures, like those of the Haida and Kwakiutl, but they differ somewhat in the details of construction. While the house of the Haida (see

FIG. 3.

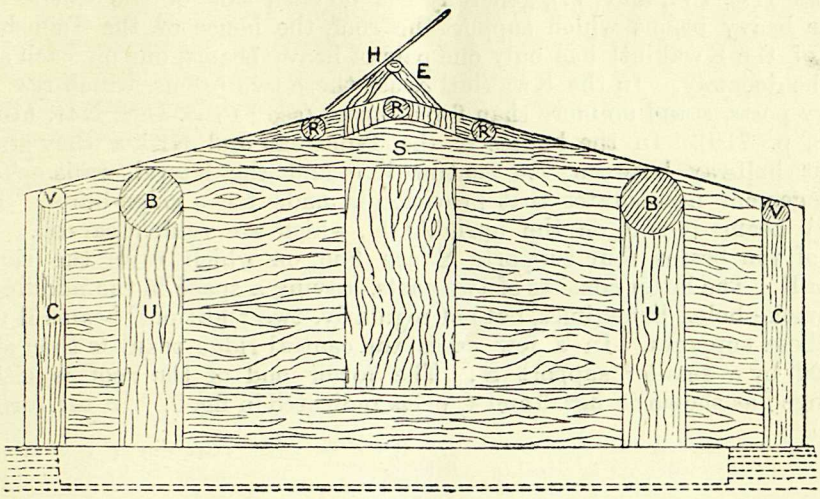
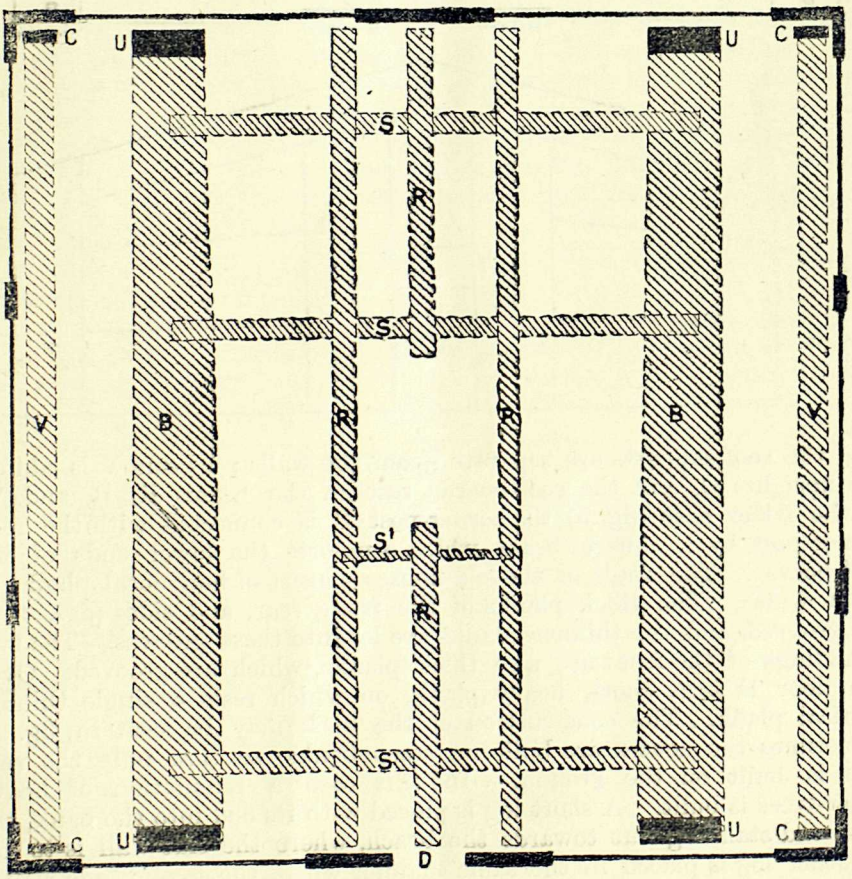
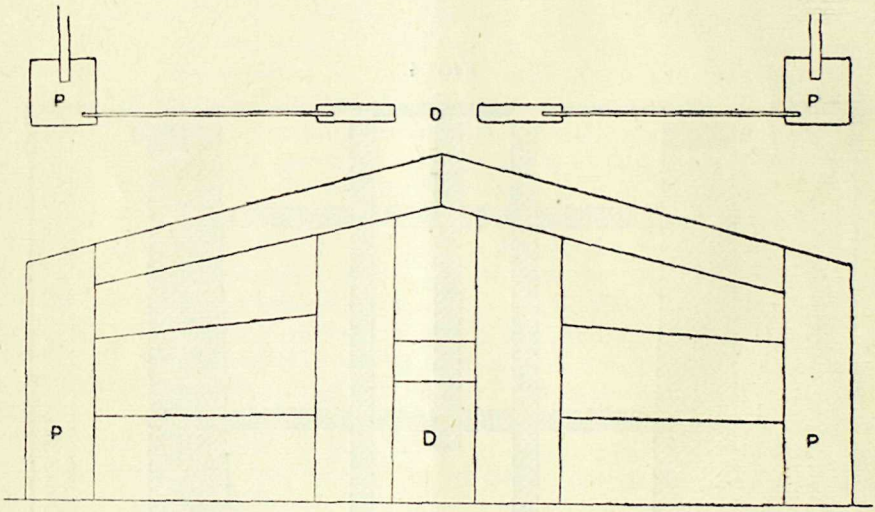


FIG 4.



Dr. G. M. Dawson, 'Report of Progress, Geol. Surv. of Canada,' 1878-79, Plates III., IV., and V.), generally has on each side of the central line three heavy beams which support the roof, the house of the Tsimshian and of the Kwakiutl has only one pair of heavy beams, one on each side of the doorway. In the Kwakiutl house these two beams, which rest on heavy posts, stand no more than 6 feet apart (see 'Proc. U.S. Nat. Mus.,' 1888, p. 210). In the houses of the Tsimshian and Nîsk·a' they stand about halfway between the central line and the lateral walls. This arrangement necessitates that provision is made for a ridge-beam. The heavy beams B rest on the uprights U, which are seldom carved. On top of the beams four supports S are laid, on which rests the ridge-beam R. The latter consists of two parts, leaving a space in the middle for the smoke-hole. Sometimes, but not regularly, two additional beams R rest on these supports. In a few cases the central ridge-beam is then supported by a smaller support S'. The lower end of the roof is either arranged as shown in figs. 3 and 4, or as indicated in fig. 5. In the former

FIG. 5.



case the roof-supports are separate from the walls; a beam V is laid on the uprights C, and the roof-boards rest on the beams R, B, and V. In the latter case (fig. 5) the corner-post P is connected with the rear corner-post by a square beam which supports the lower ends of the roof-boards. The walls of the old houses consist of horizontal planks of great width. The thick planks of the front, rear, and sides (figs. 4, 5) are grooved, and the thinner planks are let into these grooves. The two mouldings of the front are also thick planks, which are grooved. Over the door D is a short, heavy plank, on which rests a single thinner vertical plank. The construction of the back may be seen in fig. 3. Sometimes the houses are built on steep banks, so that only the rear half is built on the ground. In this case a foundation of heavy cedar-trees is built. A short log is placed with its end into the bank, the butt end standing out towards the beach, where the side wall is to be. Another log is placed in the same manner where the second side wall is

to be. A third heavy log is placed over the butts of the two projecting logs. Then two more logs are put on top of the preceding one with their ends into the bank, and thus a foundation is built up to the level of the embankment. This is covered with a platform, and the house is built about eight or ten feet back from its outer edge, so that the platform forms the front portion of the floor of the house, and also a walk leading to the house-door.

III. The Growth of Indian Children from the Interior of British Columbia.

The table below shows the results of a compilation of the rates of growth of Indian children of the following tribes:—Ntlakyā'pamuq, Shuswap, Okanagan, Kalispelm, Yakima, Warm Springs. I have combined all these tribes, because the adults have very nearly the same stature, and because the geographical environment is very much alike. The numbers of individuals are rather small, but nevertheless a few results of general interest may be deduced from it.

It will be noticed that in the eleventh, twelfth, and thirteenth years girls are taller than boys. This agrees closely with the period during which the same phenomenon takes place among the whites, and is later than among the Indians of southern latitudes. The decrease in variability is not very well marked, probably because there is a considerable uncertainty in regard to the estimated ages of the children. Still, it appears that there is a distinct drop in the fifteenth year in boys, and in the thirteenth year in girls. Among the Mission Indians of Southern California this drop takes place between the thirteenth and fourteenth years in boys, between the ninth and eleventh years in girls. Among the white children of Massachusetts the drop takes place between the fifteenth and sixteenth years in boys, between the fourteenth and fifteenth years in girls—*i.e.*, nearly at the same time as, or a little later than, among the Indians of British Columbia.

	Boys			Girls		
Age	Number of cases	Average variation	Average stature	Average stature	Average variation	Number of cases
		mm.	mm	mm.	mm.	
2	5	± 2·8	796	—	—	—
3	3	± 3·0	853	860	± 1·5	4
4	4	± 5·2	983	990	± 2 4	5
5	17	± 6·5	1,073	1,073	± 3·3	10
6	12	± 5·8	1,161	1,100	± 2·8	14
7	12	± 3·6	1 200	1,207	± 4·5	11
8	13	± 4·3	1,256	1,207	± 5·9	20
9	20	± 4·3	1,286	1,263	± 4·5	19
10	29	± 6·5	1,365	1,338	± 4·8	25
11	19	± 5·8	1,386	1,400	± 5·0	18
12	37	± 5·0	1,423	1,443	± 6·5	19
13	18	± 5·9	1,461	1,487	± 5·4	13
14	21	± 5·8	1,527	1,508	± 4·3	16
15	18	± 3·8	1,578	1,517	± 6·0	15
16	17	± 5·1	1,611	1,537	± 4·4	20
17	12	± 5·0	1,622	—	—	—
18	5	± 2·5	1,674	—	—	—
19	6	± 5 2	1,692	—	—	—

It is of interest to compare the rate of growth of Indian and white children. In the following table I give the statures of the Indian children of British Columbia and of the white children of Worcester, Mass. :—

Age: Years	Boys			Girls		
	Indian	White	Difference	Indian	White	Difference
5	1,073	1,097	−24	1,073	1,074	− 1
6	1,161	1,127	+34	1,100	1,113	−13
7	1,200	1,170	+30	1,207	1,175	+32
8	1,256	1,223	+33	1,207	1,216	− 9
9	1,286	1,270	+16	1,263	1,266	− 3
10	1,365	1,340	+25	1,338	1,328	+10
11	1,386	1,388	− 2	1,400	1,370	+30
12	1,423	1,429	− 6	1,443	1,447	− 4
13	1,461	1,476	−15	1,487	1,479	+ 8
14	1,527	1,543	−16	1,508	1,537	−29
15	1,578	1,622	−44	1,517	1,570	−53
16	1,611	1,658	−47	1,537	1,584	−47
17	1,622	1,685	−63	—	1,594	—
18	1,674	1,700	−26	—	1,591	—
19	1,692	1,713	−21	—	—	—

It appears from both tables, although more clearly in the case of boys, that the Indian child is taller than the white child, although in the adult the inverse relation of statures prevails. I have shown at another place that a similar relation prevails between full-bloods and half-breeds ('Verh. Berliner Anthr. Ger.,' 1895, p. 386). It is therefore probable that the difference in the laws of growth is a racial phenomenon.

NASAL INDEX OF SKULLS.

On p. 23 of the Tenth Report of the Committee I pointed out the difference of racial types found along the coast, and stated (p. 24) that the nose of the Kwakiutl represents a peculiar type which is not found in any other region of the coast. I have investigated the same question on a series of skulls, and have obtained the following results :—

Nasal Indices of Skulls of—

Index	Kwakiutl	Comox	Nanaimo and Sanitch	Songish, not deformed	Chinook
37	1	—	1	—	—
38	1	—	—	—	—
39	1	—	—	—	—
40	1	—	1	—	—
41	2	1	—	+	1
42	2	—	3	+	1
43	5	1	—	2	—
44	2	1	3	2	1
45	2	—	5	—	—
46	2	1	—	2	2
47	3	1	3	1	1
48	—	1	2	—	2
49	1	—	2	—	1
50	—	—	3	—	2
51	—	—	4	—	—

NASAL INDICES OF SKULL OF—(*continued*).

Index	Kwakiutl	Comox	Nanaimo and Sanitch	Songish, not deformed	Chinook
52	—	—	—	1	—
53	—	—	3	—	—
54	—	1	3	2	1
55	—	—	2	—	—
56	—	—	1	—	—
57	—	—	—	—	—
58	1	—	1	—	—
59	—	—	—	—	—
60	—	—	—	—	—
61	—	—	—	—	—
62	1	—	—	—	—
⋮	⋮	⋮	⋮	⋮	⋮
71	—	—	1	—	—
Cases . .	25	7	38	10	12
Average .	45·1	46·6	49·6	47·8	47·6

It appears that the nasal index of the Kwakiutl is by far the lowest, and that it increases among the Coast Salish. The nasal bones are at the same time large and high, while among the Coast Salish they are small, decidedly flat, and sometimes synostosed.

IV. LINGUISTIC NOTES.

1. KWAKIUTL.

I indicated on p. 107 of the Sixth Report of the Committee that there seemed to exist cases in Kwakiutl. I have since investigated this matter more fully, and find that cases clearly exist.

There is a definite article which has the following forms :—

Nominative : *da.*
Genitive : *sa*
Accusative : *qa.*
Locative : *laqa.*

The indefinite article is expressed only in the genitive and locative :—

Genitive : *s.*
Locative : *laq.*

The possessive pronoun has the following cases :—

	1st Person.	2nd Person.	3rd Person.
Nominative :	*—ɛn*	*—ōs*	*—as.*
Genitive :	*sɛn*	*sōs*	*sēs.*
Accusative :	*qɛn*	*qōs*	*qēs.*
Locative :	*laqɛn*	*laqōs*	*laqēs, laq—(a)s*

Examples : 1. Definite Article :—

Nominative : *Yā'k'ēgyatlē da nɛmō'k'uē bɛguā'nɛm.*
It said the one man.

Genitive : *Gyī'k'amaya sa mā'q'ēnôq.*
The chief of the killer whales.

Accusative : *Aatltsā'a qa dō'weq.*
He tore the cedar twigs.

Locative : *Lā'gyaa lā'qa ts'ɛlā'tl.*
He arrived at the lake.

2. Indefinite article :—

Nominative: *Mā'q'ēnôq ky'ā'tama'ya sa gyōk'.*
Killer whale painting on front of the house.

Genitive: *t'ɛmā'îs s Tsā'qîs.*
the beach of Tsā'qîs.

Accusative: *K'ā'qa wāp.*
He found water.

Locative: *Gyō'qwu'sa sa gyō'kuē laq Ky'ā'k·a.*
He built a house of the house at Ky'ā'k·a.

3. Possessive pronoun :—

1st Person. Nominative: *Yî'qa g·u'nky'în k·a'lkoa.*
This my nettle harpoon-line.

Genitive: *Iā'lak·ɛmɛn sɛn ō'mpē.*
I am sent by my father.

Accusative: *Lamɛn aq'ē't qɛn likyā'yu.*
I took my hammer.

Locative: *Laē'tl lā'qɛn gyō'kua.*
He entered in my house.

3rd Person. Nominative: *Gyō'kuas.*
His house.

Genitive: *Gyō'quat sēs gyō'kuē.*
He had a house of his house.

Accusative: *Dā'la qēs sē'ky'ak·anō.*
He took his staff.

Locative: *Nē'ɥlat'a lāqēs ts'ā'yē.*
But he said to his younger brother.

I pointed out in the Sixth Report that these possessive forms may be modified according to the location, as near speaker, near person addressed, absent visible, absent invisible. I have not, so far, discovered these distinctions in the genitive, while they occur in all the other cases.

2. NÎSK·A.

As my treatment of the Nîsk·a language in the Tenth Report of the Committee was very brief, I give here some additional information in regard to it.

In the Fifth Report (p. 82) I have treated the formation of the plural in the Tsimshian, and Count von der Schulenburg has treated the same subject on pp. 9 ff. of his work ('Die Sprache der Zimshian-Indianer.' Braunschweig, 1894). The principles underlying the formation of the plural will become clearer by the following remarks on the formation of the plural in the Nîsk·a dialect :—

1. Singular and plural have the same form.

This class embraces the names of all animals except the dog and the bear, trees, and a great many words which cannot be classified. I give here a list of some of these :—

sɛ, day.
yā'tsɛsk', animal.
k'ɛk'ā'ɥ, wing.
mîsɥk'ā'ɥ, down of bird.
g·îc, hair.
ōpq, forehead.
dz'ak·, nose.
ua'n, tooth.
iē'mk·, beard.
t'ɛmlā'niɥ, neck.
tlak·s, nail.
ban, belly.
mâ'dz'ikys, breast.
nîsk·, upper lip.
tlätsq, tail of fish.
hawî'l, arrow.
lōatlgyâ'ôtk', axe.
ts'awîk·sɛtqa', moccasins.
lak', fire.
akyc, water.
pɛlî'st, star.
aɯk', night.
ia'ns, leaf.
mēq'ā'ukst, salmon berry.
laq'amā'k's, prairie.
ts'aky, dish.
wâ'ôs, dish.
k'ōtl, yes.
k·asä'eq, front.
ts'ēn, inside.
wuldi'gyît, warrior.
al'a'lgyîq, language.
lē'ɛlgyit, feast.

qtlk·aō'm, payment.
mī'ukc, sweet smelling.
hatlhā'tluks, lean.
tlana'k't, old.
lōcanā'tlk', to be astonished.
lɛqlā'k·, to fall (rain, snow).
līya'k·, to hang (v. a.).
k·'a'mɛqk', to wish.

îā'ky, to thunder.
saanuwô'k', to rebuke.
sîlg'auê'l, to accompany.
dē'lEmEqk', to reply.
mē'lEk', to damn.
lē'mîH, to sing.
gyê, to see.
hasa'k', to want.
tlmā'Em, to help.
hätk't, to rush.
gyî'dEq, to ask.
k alā'n, to leave something.
bak', to feel.

2. The plural is formed by reduplication, the beginning of the word, as far as the first consonant following the first vowel, being repeated with weakened vowel. The accent of the word is not changed. The reduplicated syllable remains separated from the reduplicated word by a hiatus.

This is particularly evident in words beginning with a vowel. In these there is a distinct pause between the terminal consonant of the reduplication and the initial vowel of the reduplicated word:—

ôH	plural *îH'ô'H*, to throw.	*a'lgyîq*	plural *El'a'lgyîq*, to speak.
ām	„ *Em'ā'm*, good.		

It seems to me that this method of forming the plural may be considered duplication affected by certain laws of euphony. Monosyllabic words beginning and terminating either with a vowel or with a single consonant, according to the rule given above, are duplicated. Monosyllabic words terminating with a combination of consonants drop all the elements of the terminal cluster of consonants, except the first one, because else there would be a great accumulation of consonants in the middle of the word. The same causes that bring about the elision of the terminal cluster of consonants probably affect polysyllabic words in such a manner that the whole end of the word was dropped. This seems the more likely, as the repeated syllable has its vowel weakened. If a polysyllabic word was thus repeated the effect must have been very similar to the repetition of a word with a terminal cluster of consonants. For instance, *wulā'H*, to know, duplicated with weakened vowels, would form *wulHwulā'H*. In this word, according to the rule governing the reduplication of monosyllabic words with a terminal cluster of consonants, the first *H* would drop out, so that the form *wulwulā'H* would originate.

A few euphonic changes of consonants take place:—

ky, *gy*, and *k*, following the first vowel of the word, are aspirated in the reduplication, and form *H*.
g' and *k'* are also aspirated, and form *q*.
y becomes the surd aspirate *H*.
ts becomes *s*.

The weakened vowels have a tendency to change into *E* or *î*. The variability and indistinctness of the vowels make it difficult to establish a general rule.

I classify the examples in order to bring out the points referred to above.

a. Monosyllabic words beginning and terminating either with a vowel or with a single consonant.

ôH	plural	*îH'ô'H*, to throw.	*t'aq*	plural	*t'aqt'a'q*, lake; also *t'Et'a'q*.
us	„	*Es'u's*, dog.	*dzôk'*	„	*dzîk'dzô'k'*, to camp.
ām	„	*Em'ā'm*, good.	*t'ē*	„	*t'Et'ē'*, valley.
ol	„	*al'o'l*, bear.	*mêtl*	„	*mîtlmê'tl*, to tell.
daH	„	*dîHda'H*, hill.	*gyîc*	„	*gyîcgyî'c*, wrong.
d'ec	„	*d'îcd'e'c*, to push.	(*lō*) *nô'*	„	(*lō*) *nonô'*, hole.
tlap	„	*tlEptla'p*, deep.	*la'ôp*	„	*lEpla'ôp*, stone.
batl	„	*bEtlba'tl*, to lay down a flat thing.	*tsap*	„	*tsîptsa'p*, to do.
			ts'al	„	*ts'îlts'a'l*, face.
hap	„	*hapha'p*, to shut.	*ts'ē'îp*	„	*ts'Epts'ē'îp*, to tie.
g'an	„	*g'ang a'n*, tree.			

b. Monosyllabic words beginning with a vowel or a single consonant, terminating with a cluster of consonants.

sī'êpk'	plural	*sîpsī'êpk'*, sick.	*k'êck'*	plural	*k'ask'ê'ck'*, narrow.
ts'ēpk'	„	*ts'îpts'ē'pk'*, hard.	*dēlpk'*	„	*dêldē'lpk'*, short.
îsk'	„	*îs'î'sk'*, stench.	(*lō*) *dā'ltk'*	„	(*lō*) *dEldā'ltk'*, to meet.
g'îck'	„	*g'îcg'î'ck'*, lean.	*tlantk'*	„	*tlEntla'ntk'*, to move.

mîtk'	plural	*mîtmî'tk'*, full.	*tlîntH*	plural	*tlEntlî'ntH*, to be angry.
gyîtk'	„	*gyîtgyî'tk'*, to swell.	*gyêpkc*	„	*gyîpgyê'pkc*, high.
gyatlk'	„	*gyîtlgya'tlk'*, to pierce.	*êtk·c*	„	*at'ê'tk·c*, to end.
hanH	„	*hanha'nH*, thin.	*maô'xkH*	„	*maxmaô'xkH*, meek.
			yāltk'	„	*yîlgā'ltk'*, to return.

c. Polysyllabic words beginning with a vowel or a single consonant.

sī'Eb'En	plural	*sîpsī'Eb'En*, to love.	*dē'lîH*	plural	*dîldē'lîH*, tongue.
had'a'qk'	„	*hadhad'a'qk'*, bad.	*lō'lak·*	„	*lEllō'lak·*, ghost.
wulā'H	„	*wulwulā'h*, to know.	*(qan)mā'la*	„	*(qan)mElmā'la*, bottom.
bā'siqk'	„	*bEsbā'siqk'*, to separate.	*a'lgyîq*	„	*El'a'lgyîq*, to speak.
wa'lîH	„	*wulwā'lîH*, load, to carry on bark.	*ma'lg·êksk'*	„	*mElmā'lg·êkysk'*, heavy.
			haqda'k'	„	*hîqhaqda'k'*, bow.
ā'd'îkysk'	„	*ad'ā'd'îkysk*, to come.	*hō'mts'îq*	„	*hamhō'mts'îq*, to kiss.
gyî'dEq	„	*gyîdgyî'dEq*, to ask.	*ha'qg·'at*	„	*haqha'qg·'at*, sweet smelling.
asā'H	„	*as'asā'H*, foot.			

d. Change of *ky*, *gy*, and *k* into *H*.

t'aky	plural	*t'îHt'a'ky*, to forget.	*sakysk'*	plural	*sîHsa'kysk'*, clean.
hakys	„	*hanha'kys*, to abuse.	*tlēgya't*	„	*tlîHtligya't*, cripple
ōkyc	„	*aH'ōkyc*, to drop.	*mōk'*	„	*mîHmō'k'*, to catch fish.
iâ'ôkys	„	*iH'iâ'ôkys*, to wash.	*gyukc*	„	*gyêHgyu'kc*, fish jumps.
âkys	„	*êH'âkys*, broad.	*hokck'*	„	*haHhō'kck'*, to join others.
dakytl	„	*dîHda'kytl*, to lie around.			

e. Change of *y* into *H*.

hō yîq	plural	*hîHhō'yîq*, just.

f. Change of *g·* and *k·* into *q*.

mag·ā'nsk'	plural	*mîqmag·ā'nsk'*, explanation.
g·äik·ck'	„	*g·Eqg·ä'ik·ck'*, to sit.
sō'uk·sk'	„	*sEqsō'uk·sk'*, to dive.
k·äk·tl	„	*k·Eqk·äk·tl*, to drag.
ak·k'tl	„	*aq'a'k·k'tl*, to arrive.

g. Change of *ts* into *s*, and of *dz* into *z*.

yats	plural	*yîs'ia'ts*, to chop.
k·'ôts	„	*k·'Esk·ô'ts*, to chop a tree.
hē'îts	„	*hêshē'îts*, to send.
ā'dzîks	„	*az'ā'dzîks*, proud.
hē'tsumEq	„	*hashē'tsumEq*, to command.

h. Words beginning with combinations of consonants do not always reduplicate in the manner described above, as it sometimes results in an accumulation of consonants in the middle of the word. If such inadmissible clusters should result, only the first consonant of the word is repeated. In such cases initial *q* is transformed into *k·*.

ptô	plural	*pptô*, door.	*qtlkō'luq*	plural	*k·Eqtlkō'luq*, to scold.
qtlk·ô	„	*k·Eqtlk·ô*, to pray.	*qtsa'e*	„	*k·Eqtsa'e*, thick.

(See, however, the words with initial *ts* on page 19.)

i. Words beginning with *hw* have in the plural *hūw*. When *hw* is considered as one syllable, the semi-vowel *w* standing for a weak *u* and *w*, the reduplicated form would be *hwhw*, which, when pronounced rapidly and with the following vowel, must naturally become *hūw*. I believe, therefore, that this plural must be included in the reduplications:—

hwa	plural	*hūwa'*, name.	*hwîl*	plural	*hūwî'l*, to do.
hwîlp	„	*hūwî'lp*, house.	*hwô*	„	*hūwô'*, to call.
hwât	„	*hūwâ't*, to sell.	*hwāH*	„	*hūwā'H*, paddle.

j. Irregular reduplications.

α. Elision of the consonant following the first vowel.

gyîn	plural	*gyîgyî'n*, to give food.
gyīk	,,	*gyîgyī'k'*, to buy.
ts'aky	,,	*ts'ETs'ā'ky*, dish.
t'aq	,,	*t'ET'a'q*, lake.
ts'ēp	,,	*ts'EIs'ē'p*, bone.
gyît	,,	*gyigya't*, people.
māl	,,	*mmāl*, canoe.

β. Introduction of (euphonic ?) H.

dEdā'lEk·	plural	*dîHdEdā'lEk·*, to talk to.
amō's	,,	*aH'amō's*, corner.
t'ōtsk'	,,	*t'îHt'ō'tsk'*, iron.
yinā'tsîq	,,	*yîHnātsîq*, whip.
Endō'yEn	,,	*aH'Endō'yEn*, garden.
Ensgyē'ist	,,	*aH'Ensgyē'ist*, grave.
sā'atlk'	,,	*sîHsā'atlk'*, weak.
hatlā'alst	,,	*hanêtlā'alst*, to work.
hatlEbîsk'	,,	*hanêtlEbî'sk'*, knife.
sanlai'dîkys	,,	*sîHsanlai'dîkys*, sign.
ē'Esk'	,,	*aH'ē'Esk'*, debt.
aqyâ'ôkysk'	,,	*aq'îHyâ'ôkysk'*, to trust.
tg·alunwē'lEmtlk'	,,	*tg·alunwîHnwē'lEmtlk'*, servant.

Here may also belong

yō'tlmEq plural *hîHiō'tlmEq*, to command.

γ. Introduction of consonants other than H.

dEdē'ls	plural	*dElDē'ls*, alive.
makysk'	,,	*mEsmā'kysk'*.
k·Eg·ē'tk'	,,	*k·Etg·ē'tk'*, difficult.
laqlē'lp'En	,,	*laqlEplē'lp'En*, to roll.

δ. The reduplicated syllable amalgamates with the stem.

alî'ck' plural *allî'ck'* weak (instead of *al'alî'ck'*).
ane'st ,, *anne'st* branch (,, ,, *an'ane'st*).

ε. The vowel of the reduplicated syllable is lengthened and the accent is thrown back upon the first reduplicated syllable, while the vowel of the stem is weakened.

lEk·s	plural	*lā'lEk·s*, to wash the body.
wôk·	,,	*wā'wôk'* to sleep.
caky	,,	*cē'icîky*, to haul out.
tlaky	,,	*tlē'tlîky*, to bend.
t'ôk·	,,	*t'â't'Ek·*, to scratch.

3. The plural is formed by diæresis, or lengthening of vowels.

anā's	plural	*anā'Es*, skin.	*gwula'*	plural	*gūla'*, cloak.
gyî'nā'm	,,	*gyē'nam*, to give.	*hala'it*	,,	*hā'lait*, ceremonial dance.
kyîba'	,,	*kyība'*, to wait.	*hanā'k·*	,,	*hā'nak·*, woman.

4. The plural is formed by the prefix *k·a*—. In this class are included many names of parts of the body, adjectives expressing states of the body, such as blind, deaf, and also poor, words of location, and miscellaneous words which cannot be classified.

a. Parts of the body.

t'Emg·ê'c	plural	*k·at'Emg·ê'c*, head.	*an'ô'n*	plural	*k·aan'ô'n*, hand.
ts'Emî'H	,,	*k·ats'Emî'H*, ear.	*plnāQ*	,,	*k aplnā'Q* or *plnāQ*, body.
ts'Emā'k·	,,	*k·ats'Emā'k·*, mouth.	*k·'ētlk·*	,,	*k·ak·'ētlk·*, chest.
t'Emk·ā'H	,,	*k at'Emk·ā'H*, arm.	*g·âd*	,,	*k·ag·â'd*, heart.
t'Emtlā'm	,,	*k·at'Emtlā'm*, leg.	*tg·amâ'k·*	,,	*k·atg·amâ'k·*, lip.
—	,,	*k·atsuwē'Ent*, fingers.	*g·'ē'SEE*	,,	*k·ag·'ē'SEE*, knee.

b. Adjectives expressing states of the body.

kyîba'	plural	*k·îkyîba'*, lame.
sîns	,,	*k·asî'ns*, blind.
ts'äk·	,,	*k·ats'ä'k·*, deaf.
mɛwā'tsq	,,	*k·amɛwā'tsq*, crazy (= similar to a land otter).

Here may belong also

gwä'ɛ	plural	*k·agwaä'ɛ*, poor.
huQ·iō'nst	,,	*huQk·a'iō'nst*, liberal.

c. Locations.

dāH	plural	*k·adā'H*, outside.
laq'ō	,,	*k alaq'ō'*, on top.
stô'ôkys	,,	*k·astô'ôkys*, side of.

d. Other words, unclassified.

sɛmō'tks	plural	*k·asɛmō'tks*, to believe.
nō'd'ɛn	,,	*k·anō'd'ɛn*, to adorn.
yicgu'sgyitk'c	,,	*yisk·agu'sgyitk'c*, to rejoice.
lē'luke	,,	*k·alē'luke*, to steal.
guîHsilē'ɛnsgut	,,	*guîHk·asilē'ɛnsgut*, hunter.
wîst	,,	*k·awî'st*, root.
k·ā'it	,,	*k·ak·ā'it*, hat.

5. Terms of relationship from the plural by the prefix *k·a*— and the suffix —(*i*)*k'*.

niä'	plural	*k·aniä'ɛtk'*, grandfather.
ntsē'ɛts	,,	*k·antsē'ɛtsk'*, grandmother
nɛquâ'ôt	,,	*k·anɛquâ'ôtk·*, father.
nɛbē'p	,,	*k·anɛbē'pk'*, uncle.
waky	,,	*k·awakyk'* (?), younger brother.

The following two have besides reduplication of the stem with lengthening of the reduplicated syllable :

nakys	plural	*k·anē'nîkysk'*, wife
nôq	,,	*k·anâ'nɛqk'*, mother.

I found the following two without the prefix *k·a*—

waky	plural	*wakyk'*, younger brother.
gyîmHdē	,,	*gyîmHdē'tk'*, elder brother.

Irregular is

huQdā'eky'ɛn plural *tluQdā'ek'ɛntk'*, grandson.

Here belongs also

mē'ɛn plural *k·amē'ɛntk'*, master.

6. The plural is formed by the prefix *l*— with variable vowel. Words forming the plural in this manner have a tendency to form irregular plurals.

a. akys	plural	*laa'kys*, to drink.
yoxk'	,,	*lēyô'xk'*, to follow.
gōksk'	,,	*lɛgō'ksk'*, to be awake.
d'äk·	,,	*lɛd'ä'k·*, to devour.
qbɛts'aQ	,,	*laqbē'ts'ɛqt*, afraid.

b. Some words have the prefix *l*— combined with reduplication.

QdaH plural *lundē'dîH*, hunger.

c. Initial *gy* and *k·* are elided when they follow the prefix *l*—

gyâkyc	plural	*lâkyc*, a bird swims.
gyıbā'yuk	,,	*libā'yuk*, to fly.
k·ē'nɛq	,,	*lē'nɛq*, a tree falls.

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Here belong also the reduplicated plurals :—

gyamkys	plural	*lɛmla'mkys*, to warm one's self.
gya'mgyitl	„	*lɛmla'mgyitl*, to warm something.

d. Irregular but related to this class are

yaq	plural	*lā'lēq*, to hide.
yîqya'k·	„	*lîslî'sk'*, to hang (v. n.).
qdak'	„	*liduq*, to shoot.
gyenē'tk'	„	*lenêdɛmk'st*, to arise.

7. Irregular plurals.

a. Singular and plural are derived from different stems.

gy'äqk'	plural	*hō'ut*, to escape.	*dā'utl*	plural	*sa'kysk'*, to go away.
yē	„	*tlô*, to walk.	*malk'*	„	*tqä'ldɛt*, to put into fire.
iō'oqk'	„	*tqô'oqk'*, to eat.	*maqk't*	„	*cēntk'*, to go aboard.
îōk·'ɛ'n	„	*tqak'ɛ'n*, to feed.	*baq*	„	*g·ôl*, to run.
d'a	„	*wan*, to sit.	*ma'g·at*	„	*t'atl*, to put.
lɛksd'a'	„	*lɛkswa'n*, island.	*gyītl*	„	*lā'tl*, to lie down.
dzak'	„	*yêts*, to kill (pl. = to chop).	*ts'ēn*	„	*la'mdziq*, to enter.
hētk'	„	*mak·sk'*, to stand	*nôɛ*	„	*daq*, to die.
dɛphē'tk'	„	*dɛpma'k·sk'*, short.			
wētk'	„	*bak'*, form.	*qaɛ*	„	*tltlē'ngyît*, male slave.
gō	„	*dôk·*, to take.	*wat'ak'*	„	*tltlē'ngyît*, female slave.
dô'qk' (*qtlna*)	„	(*qtlna*) *sgyi'tk'*, to kneel.	*tlgō*	„	*k'ōbɛ*, small.
kycaq	„	*ksitlô'* (*ksi*—, out. *tlô*, to walk), to go out.	*tlqôwî'lky-cîtlk'*	„	*k'ōpɛwîlkycîtlk'*, nobleman.
mak·t	„	*wî'k·t*, to carry.	*gyat*	„	*ē'uqt*, man.
sk·ats'a'q	„	*alisgyī'da*, ugly.	*wī*	„	*wud'a'q*, large.
			ts'ōsky	„	*sɛs'ō's*, small.

b. Singular and plural are formed from the same or related stems.

wuyî'tk'	plural	*si'ya'tk'*, to cry, to weep.
aiawā'tk'	„	*alayuwā'dɛ*, to shout.
wīɛme'ɛ	„	*wud'aq alɛmē'd'ɛ*, to shout.
lōmā'kysa	„	*lōlē'dîkysa*, to wash clothing.
wīnak'	„	*nnē'nɛk'*, long.
wīd'ô'q	„	*d'ɛqd'ô'q*, stout.
k'stak·s	„	*lukstsā'dɛk·s*, to leave.
q'aēma's	„	*q'aēma'k·st*, young.
am'ama's	„	*am'ama'k·st*, pretty.

Composition.

The composition of words in Tsimshian and Nisk·a is remarkably loose. Although there are a great number of formative elements which have no independent existence they do not combine very intimately with the words to which they are prefixed. I pointed out before that the reduplicated syllable remains separated from the stem by a hiatus or pause. The same is true of all compositions, as the following examples will show :—

hagun'iē'ɛ, to walk towards.
ts'ɛm'a'kys, in water.
lɛg·ɛm'ōh, to throw into (from top).

This loose connection is also shown by the fact that in compounds the plural is formed from the stem alone.

k·alts'a'p	plural	*k·alts'ɛts'a'p*, town.	*nsē'bɛnsk'*	plural	*nsɛpsē'b'ɛnsk'*, friend.
k·alhwî'lp	„	*k·alhuwä'lp*, house.			
daqgya't	„	*daqgyigya't*, strong.			

There are very few cases of contractions.

Sîyidɛmna'k·, chieftainess ; plural, *sîyidɛmhā'nak·*. The end of this word was undoubtedly originally *hanak·*, woman.

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