

251

TRANSACTIONS

OF

The Canadian Institute.

VOLUME V.



TORONTO:

PRINTED FOR THE CANADIAN INSTITUTE

BY MURRAY PRINTING COMPANY.

1898.

ERRATA.

Page 109, lines 9 and 32, for "1896" read "1886."

Page 110, line 3, for "1896" read "1886."

Page 110, line 28, for "1895" read "1885."

Page 112, line 28, dele "below zero."

Page 268, line 19, for "latter" read "former."

Page 268, line 29, for "*phlegmaria*" read "*Phlegmaria*."

Page 274, foot-note, for "Rhabenhorst" read "Rabenhorst."

Page 276, line 17, for "*phlegmaria*" read "*Phlegmaria*."

Page 290, line 3, for "hypobasal" read "epibasal."

Page 359, line 4, for "Ph.B." read "Ph.D."

OFFICERS

OF

THE CANADIAN INSTITUTE,

1897-1898.

President :

A. B. MACALLUM, Ph.D., M.B.

1st Vice-President :

B. E. WALKER, Esq.

2nd Vice-President :

DANIEL CLARK, M.D.

Secretary,	EDWARD C. JEFFREY, B.A.
Treasurer,	JAMES BAIN, JR., Esq.
Librarian,	JOHN SQUAIR, M.A.
Curator,	G. G. PURSEY, Esq.
Editor,	GEORGE KENNEDY, M.A., LL.D.

Members of Council :

A. P. COLEMAN, Ph.D.
 R. F. STUPART, Esq.
 R. RAMSAY WRIGHT, M.A.
 ARTHUR HARVEY, Esq.
 JOHN MAUGHAN, Esq., *Chairman Biological Section.*
 J. C. HAMILTON, LL.B.

Assistant Secretary and Librarian :

MARGARET J. LOGAN.

CONTENTS.

	PAGE.
Officers, 1897-98.	iii
Three Carrier Myths	I
REV. FATHER MORICE, O.M.I.	
The Fluctuations of Lake Ontario.	37
KIVAS TULLY, C.E.	
The Gesture Language of the Blackfeet	44
REV. JOHN MACLEAN, PH.D.	
The Climate of Alberta.	49
R. F. STUPART.	
Aboriginal American Inscriptions in Phonetic Characters.	53
JOHN CAMPBELL, LL.D., F.R.S.C., ETC.	
Wales and its Literature	64
NEIL MACNISH, B.D., LL.D.	
The Fur Trade, 1783-7	74
CAPT. E. CRUIKSHANK.	
A Review of Carvalyn Gailckagh or Manx Carols.	83
NEIL MACNISH, B.D., LL.D.	
The Celt in Ancient Egypt and Babylonia.	89
JOHN CAMPBELL, LL.D.	
The Seasons, Hudson's Strait.	104
F. F. PAYNE.	
Picture-Writing of the Blackfeet	114
REV. JOHN MACLEAN, PH.D.	
Rainfall and Lake Levels	121
R. F. STUPART.	
The Blackfoot Language.	128
REV. JOHN MACLEAN, M.A., PH.D.	
The Dénés of America Identified with the Tungus of Asia	167
REV. JOHN CAMPBELL, LL.D.	
Spatial Thresholds of Colours and their Dependency on Contrast.	225
W. B. LANE, B.A.	
Joseph Brant in the American Revolution.	243
CAPT. ERNEST CRUIKSHANK.	
The Gametophyte of Botrychium Virginianum	265
EDWARD C. JEFFREY, B.A.	
The Picts	295
REV. NEIL MACNISH, B.D., LL.D.	
The Function of Indirect Vision and the Use of Coloured and Smoked Eye Glasses	305
A. KIRSCHMANN, PH.D.	
Counting and Time Reckoning.	311
JOHN THORBURN, LL.D.	
Late Formations and Great Changes of Level in Jamaica	325
J. W. SPENCER, M.A., PH.D.	
Resemblances between the Declivities of High Plateau and those of Submarine Antillean Valleys.	359
J. W. SPENCER, M.A., PH.D.	

Transactions

OF —

The Canadian Institute.

No. 9.]

OCTOBER, 1896. [Vol. V., Part 1.



Toronto:

The Copp, Clark Company, Limited.

1896.

PRICE - \$1.00

CONTENTS.

	Page
Three Carrier Myths.....	1
REV. FATHER MORICE, O.M.I.	
The Fluctuations of Lake Ontario.....	5
KIVAS TULLY, C.E.	
The Gesture Language of the Blackfeet.....	4
REV. JOHN MACLEAN, M.A., PH.D.	
The Climate of Alberta.....	-
R. F. STUART.	
Aboriginal American Inscriptions in Phonetic Characters (With Plates)
JOHN CAMPBELL, LL.D., F.R.S. & C. ETC.	
Wamp and its Literature.....
NEIL MACNISH, LL.D.	
The Fur Trade, 1783-7
CAPT. E. F. FRESHWANK.	
A Review of Carvalyn Gailkagh of Mackinac.....
NEIL MACNISH, LL.D.	
The Celt in Ancient Egypt and Babylonia.....
JOHN CAMPBELL, LL.D.	
The Seasons—Hudson's Straits.....	12
R. F. PAYNE.	
Picture-Writing of the Blackfeet.....	1
REV. JOHN MACLEAN, M.A., PH.D.	
Rainfall and Lake Levels.....	14
R. F. STUART.	
The blackfoot Language (<i>To be continued</i>).....	12
REV. JOHN MACLEAN, M.A., PH.D.	

ERRATA

- Page 109, lines 9 and 30. (for "1896" read "1886.")
 Page 110, line 3,
 Page 110, line 28, for "1895" read "1885."
 Page 112, line 28, del. "below zero"

TRANSACTIONS
OF
THE CANADIAN INSTITUTE.

THREE CARRIER MYTHS.

With Notes and Comments.

BY THE REV. FATHER MORICE, O. M. I.

[*Read 2nd November, 1895.*]

INTRODUCTION.

In point of length and general diffusion, the most important of the legends current among the Carrier Indians is that which records the adventures and many deeds of *ǵstas*, their national culture hero. But it cannot be described as a Carrier legend: it is merely a Carrier version of a myth which is the original property of the Pacific Coast Indians. Barring some details due mainly to local colouring, its chief incidents are identical, and its hero is but a counterfeit of the *Yētl* of the Clingit, the *Ni-kil-stlas* of the Haida and the *Kaneakeluh* of the Kwakwiutl. Hence, as my studies have so far had for objective the distinctive traits of strictly Déné life and the morphology of the Déné languages, I do not acknowledge myself open to the charge of negligence in not having, to this day, collected more than fragments of that story.

It were tedious, as well as unprofitable, to repeat here what I have said in my former essays of the mixed origin of the Carrier sociology and mythology¹. It must suffice to remark that better opportunities and prolonged investigations have not changed by the length of one iota my convictions in that respect. Even one of the three legends which I now introduce to the lovers of folk-lore, the second, has but a dubiously Déné origin. I find no equivalent of it in the collection of the "*Traditions indiennes du Canada Nord-Ouest*" published in 1888 by the Abbé E. Petitot². Yet its details and intrinsic features would seem genuinely Carrier.

With the exception of the third, which is widely diffused among different Déné tribes, none of them has, in the eyes of the natives, any paramount importance. If I single them out among the others which I

¹Are the Carrier Sociology and Mythology indigenous or exotic? Trans. Royal Soc. Canada, Sect. II, 1892.

²Alençon, E. Renaud de Broise, Place d'Armes, 5.

have transcribed, it is because I think that, though each of them is given the outward garb of an apologue, the events they refer to can, without exaggeration, be considered as endowing them with the character more of traditions than of myths properly speaking. My meaning will become more apparent from a perusal of the comments wherewith I have ventured to accompany them.

These, I fully expect, will find many an incredulous reader, when they do not excite the supercilious pity of the modern critic. Speaking of the Vedas and the Rigveda is much more fashionable in certain circles than quoting the Bible and referring to the momentous events mentioned in Moses' Genesis. Another school of folk-lorists would also see in the native American myths nothing but personifications of natural phenomena. But I cannot help thinking that the latter's ingenuity would have to be exercised to a rather remarkable degree if they were looking, as they are wont, to the following detailed legends for a figurative account, say, of the daily conflict between light and darkness or some other physical phenomenon. As to the former, I suppose one may always be permitted to refer to the Biblical narratives, were it only as to historical chronicles, independently of the inspired character of their authors.

Moreover, it is but just to add that most of my commentaries are merely hints thrown out more in the shape of queries than as incontrovertible facts. Attempts at identifications, I know, are generally dangerous, especially when their basis is such vague and disconnected elements as those furnished by the stories upon which the present paper is founded. Yet these stories contain a few points which, to my mind, are not without significance, and these I shall try to bring out in all sincerity. I am wedded to no pet theory as to the origin of our Indians, and this freedom from preconceived ideas leaves me so much the more at liberty to speak out my mind frankly.

To the proper understanding of an aboriginal myth's meaning, one should not forget that the native chronicles have absolutely no regard for chronology and very little, indeed, for consistency. They abound in anachronisms no less than in synchronisms; and no wonder. A people having no written literature cannot be expected to have preserved in narratives handed down by word of mouth only the exact order of events. Furthermore, the real facts thereby related are almost invariably hidden under a thick veil of details more or less puerile, and these details are always coloured after the particular environment of the tribe. The human mind cannot grasp or imagine that a duplicate of which the eyes have never seen in whole or, separately, in its component parts. Therefore one cannot reasonably exact from a native story a correct ac-

count of things the like of which the narrator has not seen. Such long ages have elapsed since the events hinted at have occurred and so many generations of aborigines have been accustomed to the mode of life of their present descendants that it is but in order to be indulgent when it is a matter of detail.

One and the same personage is also often made to play the role of various historical heroes, as we shall see further on.

Another point of mythological exegesis which it is hardly necessary to mention is that when the narrative, turning into an apologue, introduces animal characters, these are not, of course, to be taken literally.

There is also a last point which might be noted here, that relative to the mystic or sacred numbers of some myths. But this will be found explained at length in the course of my remarks on our first legend.

The Carrier stories are generally much more elaborate and longer than those current among the Eastern Dénés. They evidence also a tendency to become apologues or allegories not to be found in their Eastern counterparts. Must this be regarded as a mark of a more cultivated mind and consequently of later origin, or should their very completeness be looked at rather as indicative of greater purity? This I leave to the reader to decide.

A word now as to the way the texts have been collected. Most published accounts of native legends purport to be the English version of the words of some old Indian written on dictation by the transcriber. I tried this system when I resided among the Tsiṣṣoh'tin some twelve years ago, but the results were most unsatisfactory. I could find no Indian clever enough to dictate to me without interruptions, repetitions or omissions, any single legend. Therefore it is but fair that I should give an idea of my present mode of transcribing aboriginal myths, so that the reader may be in a position to gauge the degree of accuracy of the following texts.

I have a reliable Indian narrate me as clearly as possible the whole of one myth (when this is not too long) in his native language. I then repeat as verbatim as I can what I have heard, subject to corrections when such may be necessary, and then I write down the whole in Indian. My last step is generally to read out my version in the hope of provoking further notices of inaccuracies.

This mode of gathering native legends may appear rather loose and fanciful. Yet it is but justice to myself, no less than to the present versions, to remark that, as I speak Carrier more fluently than English or even than my native French, my thoughts are generally through the channel of the aboriginal idiom, so that I find no great difficulty in

repeating, and afterwards in writing down in almost the same terms what has been told me. This method has also the advantage of preventing the narrative from being cut up in those short, half-line sentences common to the stories transcribed on dictation, and which some may wrongly believe to be the normal condition of Indian phraseology.

The English translations of the following legends have been made in as simple a style and as literal as was possible consistently with intelligibility and clearness of expression. Hence the quaintness of some passages.

I.—PURSUED BY THEIR MOTHER'S HEAD.

Told by Lizette Elmok, of Stella (West End of Lake Fraser).

A man was living with¹ a woman. He always slept away from her whenever he was preparing his traps², and he observed faithfully all the ancient prescriptions. Yet he could catch no game. Animals wanted him not³; they all avoided his traps. Each time that he returned home from a visit to his traps he found his wife with her face painted and her hair carefully combed.

One day that he had left as usual, he spied her from afar, and noticed her painting her face and carefully combing her hair. Then she set out for a tree, dried up yet standing⁴. Once she had reached its base, she seized a stick and therewith struck the tree several blows. Presently two big serpents crept down from the top of the tree and knew her⁵.

Now that he knew why game avoided his traps, her husband returned home unseen by her, and there arrived, he spoke not a word. But shortly after, he took a big knife, concealed it in his bosom⁶ and made for the dried-up tree. Then he did as he had seen his wife do, struck the tree with a stick and when the two big serpents had come down creeping on him, he cut their heads off with his dagger. He next set their mouths and eyes a-yawning by means of splinters and carried them home.

¹ *Yə-rə-sla*, lit. "was sitting near". Is used to designate the matrimonial union.

² See "Notes on the Western Dénés," Trans. Can. Inst., Vol. IV., p. 108.

³ Carrier idiom. The natives always speak of caught game as if a sort of sympathy existed between it and themselves.

⁴ The Carrier word *ten-qaih* means all that.

⁵ In the biblical sense of the word.

⁶ The dress of the primitive Carriers being devoid of pockets, any object carried about the person was either suspended from the neck or from the belt, or, if concealment was desired, stored in the folds of the tunic.

As soon as he got home, he ordered his two little children off, and before they went, he gave to the eldest one, a child of five or six snows, a stone arrow-head, a *sivastco*¹ thorn, a red woodpecker's² tail and a stone dagger. At the same time, he loaded the eldest child with his little brother who was still in the moss³. He finally passed his hand over the little one's mouth, and thenceforth the babe could talk as a grown up child.

The two children, the elder packing the younger, had no sooner departed than their father killed his wife by hurling at her the two big serpents' heads. But as often as a well-directed blow had cut her body asunder, the disjointed parts immediately reunited themselves, so that he could not tear her up to pieces as he wished. Therefore he had to give it up. He simply cut her head off and threw it out of the lodge. Her body he dropped in a rapid near by.

While the two brothers were going on at random, the younger, who was packed by the other⁴, saw of a sudden their mother's head coming out after them. Then he said: "Elder brother, mother's head is pursuing us". Whereupon his elder brother threw out behind himself, without turning back, the stone arrow-head which his father had given him. The arrow-head became at once a mountain which, for the while, cut them off from their mother's pursuit.

But their mother's head was changed into wind and continued to pursue them. "Elder brother, mother's head is still after us," said the little one in the swaddling clothes. Thereupon his brother threw behind him, without looking back, the *sivastco* thorn handed him by his father. The thorn transpierced the head and set it bleeding, after which it was transformed into a thorny bush. The bush grew to a prodigious height, and for a moment it barred the passage to their mother's head. But the head finally jumped over it and continued to pursue them.

Therefore, the child in the moss said again: "Elder brother, mother's head is still coming after us." Then the eldest child threw behind him

¹ *Crategus tomentosa*.

² *Sphyrapicus varius*.

³ The Carriers use moss as swaddling clothes. See "Notes on the Western Dénés," Trans. Can. Inst., Vol. IV.

⁴ The reader should also remember that our aborigines always carry their babes on the back with their face turned in an opposite direction from that of the packer, and that the child is carried in an upright position.

the woodpecker's tail, which was instantaneously changed into fire¹. Yet the head passed through the flames and was still after them.

They then reached a very large lake, a lake so large that the opposite shore was invisible. A narrow dam was formed across the lake, on top of which they passed as on a trail. The dam was disappearing immediately behind them, so that no roadway was left. Yet their mother's head was following them in the air. The eldest child sent it a blow² with his dagger, whereupon two whales³ jumped out of the water and swallowed it.

When they had landed on the other side of the lake, the elder child deposited his little brother down against a stump and made him a ball⁴ to play with.

While the little one was amusing himself therewith, an old man was sighted on the lake who manned an iron raft⁵. Soon after, the old man landed his craft close by the two brothers. Now it happened that the little child's ball fell by accident on the stranger's raft. As the babe was crying for his toy, the old man bade his brother come and fetch it over to him. But as soon as the child was aboard, the old man drew out and made for the middle of the lake. Which seeing, the babe left on shore leaped out of his swaddling clothes and, transformed into a wolf, set out to follow as well as he could the outgoing raft, even as a dog uses to run for us when we are navigating a piece of water.

Meanwhile his brother was bewailing his fate, and kept constantly weeping after him. Therefore, to console him, the old man said: "Weep not; I have at home two beautiful daughters: I will give them out to you as wives."

When they had reached the opposite side of the lake, the old man left the child on the iron raft, and went out to his lodge which was built close by the shore. His two daughters were there. So he said to them: "Go and bring over him who shall be your husband." They therefore went down to the beach, and as soon as they had seen the child⁶ who had so far remained on the raft, they remarked between themselves that

¹ The tail of that bird is red. Hence the passage is allegorical.

² *Yot'si al'to*, "struck at it," but without releasing his weapon, as Moses did at the crossing of the Red Sea.

³ *ʔo-tco*, "fish-big." No land-locked fish is called by that name.

⁴ *Nʔʔək*. Known to the prehistoric Carriers.

⁵ Others say a copper canoe. Iron or copper, however, have here the same signification, which is that the craft was of a magic or wonderful description.

⁶ Since he was of marriageable age, he must have been more than a child. Yet the legend calls him a child down to the end. Consistency must not be sought out in aboriginal tales.

he was not the first beautiful child whom their father would destroy. Wherefrom he concluded that the old man was wont to kill children. Yet he followed them into their lodge, and was at once placed between them¹.

After a little while, the old man said to the child: "Let us go by water and bring over some wood to make arrows with." They went out therefore and, crossing the lake, arrived at a place where amelanchier was plentiful². This was the slope of a mountain. So the old man, staying on his raft, sent the child ashore to collect the wood. But while the child was climbing up the mountain, the old man pushed his raft off and left for home.

When he was as yet a short distance from the shore, he called out after the big serpents, whereupon two gigantic snakes darted out of the mountain to devour the child. But the child cut their heads off with the dagger which their father had bequeathed him. He then took one of them, set its mouth and eyes ajar by means of splinters, and, making the circuit of the lake by land, got back to the lodge before the old man had arrived by water. Then he hung the snake's head immediately above his father-in-law's sleeping place.

The old man finally came home suspecting nothing. But having accidentally remarked on his own moccasin a spot as of blood just dropped from above, he looked up and saw the snake's head hanging. This so much frightened him that he ran out for fear and commenced crying after his big serpents; for his he called them.

Some time thereafter he said to the child: "Now that we have the wood for the arrows, let us go for the feathers to fletch them." Therefore they went out again by water and crossed the great lake. As soon as they had reached the shore, the old man told the child that the top of the mountain was covered with the feathers of the thunder-bird³ and sent him up to fetch some for him. But the child was no sooner out of sight ascending the mountain than his father-in-law drew out again with his iron raft and and set out to return home.

While the child was searching for feathers amidst the rocks of the summit, he suddenly came upon a house and he also met two winged

¹ *I.e.*, was married to them, subject to the trials which he was to undergo at the hands of his prospective father-in-law.

² The shaft of the Carrier arrows was invariably of *A. alnifolia* or service-tree wood.

³ It is a well known fact that most American aborigines believe the effects of thunder to be due to a gigantic bird of the eagle family. The winkings of its eyes produce lightning, while the peals are caused by the flapping of its wings.

maidens¹. One of them coming up to him said : " Our father is terrible and our mother, too, is terrible ; they will kill you." Then the youngest said to him : " It is I whom people call *Su-ne-naj'i*, the skillful concealer." Therefore she took the child up and hid him under one of her wings' feathers.

When her father came home, he remarked : " How is that ? It smells of *ḡstas*²!" To which she made answer, saying : " We have seen nobody." But the father-thunder set upon inspecting each of her wing feathers successively. As soon as he got to the one concealing the child, who was no other than *ḡstas*³, the young girl slipped him off so dexterously under the feather just examined that her father did not see him.

Then the thunder-bird began to send forth his bolts. The whole mountain was soon trembling under his peals and his bolts were for a while falling right and left on the rocks of the mountain. It was very terrible. Little by little, however, the father-thunder calmed himself, and the child, whose presence was no more suspected, was at liberty to come out of his place of concealment.

In his agitation the thunder-bird had strewn the top of the mountain with a large number of his feathers. These the child picked up, made a bundle of them and set out to return to the house of his father-in-law, who by that time had got home.

The child therefore descended to the base of the mountain and followed the shore of the lake until he got back to the lodge of the old man. His father-in-law was immensely surprised to see him arrive, inasmuch as he had for a time thought him dead. " Thus it is that this one⁴ torments people!" said the child entering the lodge, and then he cast the bundle of feathers down in the fire-place, the ashes of which, floating up in clouds, fell back on the old man. For the child was angry indeed.

Some time afterwards the old man said to his son-in-law : " Let us fly one against the other⁵." To which the child made answer, saying : " It is you who make the proposition, therefore commence yourself." The old man transformed himself into a grey jay⁶, and set out to fly

¹ This whole episode is substantially found in a separate legend of an Eastern Déné tribe.

² The introduction of *ḡstas* here is evidently an interpolation.

³ So said my narratrix.

⁴ That is the old man ; expressive of spite.

⁵ *Ná'to pe ḡgal'shítéh*, that is " let us see which one of us can fly the best."

⁶ *Perisoreus Canadensis*, a bird constantly laughed at by the natives, and synonymous among them with stupidity and vain talk.

across the lake. He had proceeded but a short distance when the child clapped his hands together, which caused the jay to fall in the water. He was so helpless that he got drowned, whereupon a great darkness ensued.

Then the old man's daughters commenced lamenting the loss of their father. "He is terrible¹; he will cause the death of all of us," they said between their sobs. "Do revive him." Their husband went out, therefore, in the old man's raft to where the bird was floating, dead, on the surface of the water. He took it aboard and jumped across it, thereby restoring life to it².

Afterwards the child changed himself into a water-ousel³, and flew across the lake and back without mishap. Consequently, the old man avowed himself beaten. He gave him his own iron raft, together with his two daughters, and let him go and search for his younger brother, who was now a wolf.

So the child went out with his two wives. They alone were doing all the paddling. They landed their husband at every promontory that projected into the lake, and let him follow on foot all the sinuosities of the bays, looking out for his brother-wolf.

After a long journey they reached a place full of footprints. These were caused by dwarfs⁴ who were playing on the shore with his brother's skin. Now the child transformed himself into a stump and planted himself near by. When the dwarfs saw it, some said: "It looks like him."⁵ Others differed, saying: "No, it is not like him." Therefore, to identify the stump, they brought out a big snake which coiled itself round it, and which, after uncoiling, declared: "It is a real stump."

Then, during their sleep, the child cut their throats with his stone dagger, and gathering up his brother's bones, he put them back within their skin. After he had jumped across the whole, it began to crawl as does a worm. Some little bones which he had overlooked he added to the others, and again jumped across the whole, when his brother-wolf commenced to walk naturally.

Pekwānāyāt. I translate literally, but the hidden meaning is no doubt that their father is endowed with magic powers.

² As well as giving him back his former human condition.

³ *Cinclus aquaticus.*

⁴ *Ttānānē*, which means also foreigners, and is at the present day applied by the Carriers to Indians of all but Déné parentage. Dwarfs, in their mythology, generally play a malefic, noxious role.

⁵ That is, like his elder brother.

He then put him on his raft and set out in company with a muskrat and a young beaver. The water was soon noticed to rise up at a prodigious rate. It rose and rose until it covered the highest mountains. Rising still higher, it almost touched the sky, when the child, striking at it with his dagger, the flood began gradually to subside.

He waited a long time, and then sent down in search of land both the muskrat and the young beaver. Very long after, they both came up to the surface, dead. The young beaver had his paw clutched, but empty, while the muskrat's contained a little mud¹. This the child took out and kneaded with his hands so as to extend it into an island. After additional handling, it became a large island on which he and his brother-wolf landed.

He then sent his brother-wolf to see how the land was. On taking leave of his brother, the wolf said: "If I come back silent, you shall know thereby that the land is not yet inhabitable. If I howl from a very long distance, it shall be a sign that the land is well." Then he added: "Know you also that you shall die before me."

So he said, and went. Long thereafter he came back in silence, as the land was not yet inhabitable. But the second time that he had set out to explore the island, he was heard howling from a very great distance. Therefore, *Ḥstas*² settled definitely. As for the wolf, he is still in existence, while *Ḥstas* is no more.

COMMENTS.

The above is the exact reproduction of what the Carriers give as one continuous legend; but its equivalent among their congeners east of the Rocky Mountains is contained in two or more separate stories. Our narrative is, as to form, of a genuinely Déné character; yet as the historical facts of which I believe it to be but a disfigurement belong to the whole human race, that myth is far from local in origin or diffusion. To the unprejudiced reader, at least two most important events of the remotest antiquity will appear as hinted at by the Carrier tradition: I mean the fall of the first woman and the destruction of mankind by the Noachian deluge. These two points shall be separately treated of.

¹ In the native mythology, while some animals are assigned a ridiculous or hurtful role, others constantly play the part of a benefactor or of a wiseacre. Among the latter is the muskrat, to which is here due the re-creation of the earth, while in another legend (See *Are the Carrier Sociology and Mythology Indigenous or Exotic?* Trans. Roy. Soc. Canada, Sect. II., 1892, p. 125), it is made instrumental in procuring fire for men.

² Another proof of the influence of western on eastern mythology. *Ḥstas* should have nothing to do with the present legend.

And first as to the relations of the woman with the serpent. Here is, after the original text of Petitot, the Chippewayan counterpart of the tradition :

"A woman lived with her husband. While her husband was hunting, she said : 'I will go and fetch fire-wood'¹; but she went instead to a big tree full of snakes with which she was living criminally. Then her husband being much displeased and seeing a big tree loaded with fruit and growing among tall grass, he said²: 'Husbands, I have come for you ; come down creeping!' Then the big snakes came down and the husband killed them all instantly. After he had made a soup of their blood for his wife, his wife said when she came back : 'Husband³, wait awhile ; I will go for some wood and then I will eat.' But her husband : 'No, there is plenty of fire,' said he ; 'eat, and then you will chop wood.'

"Finally she went for wood, and, as soon as she got to the big tree, she got very angry and was heard to say : 'I loved dearly my husbands indeed, and behold now they are certainly dead!' Whereupon she returned to her husband ; but as soon as she drew near him, he cut her head off with an axe.

"Then he went to the shore of a river, where he found an old woman called the Locust. 'Help me and ferry me across,' he said to her. Immediately the old woman stretched her legs across and let him pass. Then his wife's head having followed him, said to the Locust : 'Ferry me across the river.' Then the old Locust let the head come rolling on her legs ; but when the head was midstream, the old woman spread her legs apart, causing the head to drop in the river. Ever since people have not seen it."⁴

It will soon be seen that not only is the Carrier myth more detailed and elaborate, but that it affords much better material for identification with history.

With the exception of that relative to the deluge, few myths have been more generally diffused than that of the woman and the serpent. It is well nigh impossible that such a notion be not founded on fact, nay, on a

¹The text says "fire," but evidently means "fire-wood."

²That is, in imitation of his wife's actions. The eastern narrative could be much clearer, and though the transcriber does not state his method of writing down Indian stories, I suspect that the obscurity of some passages must be due to their having been written on dictation, a disadvantage which would have been avoided by letting the natives narrate uninterrupted the whole legend.

³Among the Western Dénés, no woman will call her spouse "husband."

⁴*Traditions indiennes*, etc., p. 389. Another version of the same myth has a somewhat different ending.

fact with momentous consequences, since it has left its impress on peoples so utterly devoid of all kinds of literature as the American aborigines. Woman, serpent and guilt—always of a lascivious character—are three points which seem inseparably connected. In a few cases, it is true, woman and man-serpent may be replaced by man and woman-serpent; but the nature of the relations between the couple remains identical. People will talk of ophiolatry; they will discourse on the Ophites and their unnatural cult of the matter, the serpent, as opposed to the spirit personified by their so-called Demiurgos, the Jehovah of the Bible; they will write learned dissertations on the serpent mounds of the old world and of the new; but if they cared to go to the root of the question, I think they would infallibly find guilty relations, either by word or by deed, between a representative of the human species and a serpent as the ultimate source of such monuments or religious systems.

In the case of the Ophites, it is a matter of notoriety that they worshipped the serpent because, by tempting Eve, he had introduced "knowledge"—*intelligenti pauca*—into the world. That the serpent effigies of America had a cognate origin can be proved by the relics a few of them have been found to contain; but more especially by the prevalence among the aborigines of the tradition of immoral commerce, in times remote, of a woman with a serpent.

Thus in Adams county, Illinois, a serpent effigy has been discovered with fire-beds and evidences of cremation of bodies in the bottom of the mound. Now, the phallic symbol was found there. Nay more, "the skeletons of two snakes were found coiled up between the hands near the secret parts" of some of the bodies¹. The connection between the serpent and the woman, at least by implication, is here evident. In the first case, we have the ophidian mound and the phallic symbol, and in the second, serpent and lasciviousness are associated in a still more suggestive manner.

No less suggestive are the following facts gleaned from the mythologies and the archæological remains of the most important American nations.

As is gathered from the Codex Vaticanus, corporal ills were supposed among the early Mexicans to be produced by as many causes corresponding to the different parts of the body. Their therapeutics must have had something of a homœopathic character, since their doctors cured, for instance, the diseases of the tongue by the earthquake, those of the breath by the air, those of the teeth by a flint, etc. A coloured plate

¹ American Antiquarian, Vol. XVI., p. 17.

reproduced in the Tenth Annual Report of the Bureau of Ethnology¹ explains these mysterious relations. Now the cause assigned to venereal diseases was the serpent, and the serpent was regarded according to the commentary thereon "as that from which their diseases proceeded in their commencement²."

The culture hero of the Aztecs, in whom was also worshipped the human reproductive principle, was Quetzalcoatl. According to Dr. D. G. Brinton³, who speaks after Torquemada⁴, "he was the god on whom depended the fertilization of the womb," and "sterile women made their vows to him, and invoked his aid to be relieved from the shame of barrenness." Now one correct translation of his name is "the beautiful serpent" and one of his surnames is, in the Nahuatl language, synonymous with the virile member. Serpent and phallus—and, by implication, woman—are here again associated.

In the volume emanating from the Bureau of Ethnology quoted above is also reproduced what looks as a pictograph which is stated to have been found in Guatemala. It represents two personages, one, a skeleton, probably symbolical of death, and the other, a person with an emaciated face and in a recumbent position, evidently indicative of a state of sickness. The cause of this is clearly shown in the shape of the serpent, which here again has the same suggestive relation to man, since it is made to encircle the loins of the diseased personage⁵.

But a still stronger argument can be derived from the prevalence of the serpent myth among the American aborigines. We have already noticed it among two different Déné tribes. Among the Abenakies the story is that an oft-married woman was followed by her sixth husband to a wild place among the rocks and finally to a pond. After she had sung a song, a serpent came out of the deep which twined around her and enveloped her limbs and body in its folds⁶. Here we have, therefore, adulterous intercourse with death as its consequence, viz., that of her successive husbands. A variation of the same myth recounts the similarly guilty commerce between a married woman and Atosis, a beautiful serpent.

Among the Zunis, the serpent is said to have gained power over the daughter of a priest-doctor who was wandering near a lake and married her.

¹ Washington, 1893, Plate XLIX.

² Tenth Annual Report, etc., p. 614.

³ American Hero-Myths, p. 128. Philadelphia, 1882.

⁴ *Monarquia Indiana*, Lib. XI, Cap. XXIV.

⁵ *Ubi Suprà*, p. 730, fig. 1235.

⁶ American Antiquarian, Vol. XVI, p. 29.

A story of the Tusayans relates the adventures of a mystic Snake Youth, who brought back and married a strange woman. She gave birth to rattlesnakes which, biting the people, compelled them to migrate¹.

In the Blackfeet mythology the story of the woman and the serpent is so much alike to that of our Carriers that we must trace its main details to a common origin. Briefly told, it is as follows :—The wife of a hunter had a black-snake for a lover, which lived in a cavern or den in a patch of timber. The children set fire to the timber and were chased by the head of their mother, while the body went after the father. The children threw sticks behind them, which became forests; stones, which became mountains; moss, which became a river, into which the head rolled and was drowned².

Now as to the identification of these various traditions with sacred history. According to the Carrier legend, a wife had criminal relations with two big serpents—why *two* will soon be explained. Her husband kills the snakes, cuts off his wife's head and throws it out of the lodge with the result that her children become miserable, wandering over land which is not theirs and incessantly pursued by their mother as if they had to pay for her own guilt. In the same manner, through guilty intercourse with the serpent hailing, as in the American legend, from the tree of "knowledge", Eve deserved death at the hands of her Lord and was punished even in her posterity. She was driven out of the terrestrial paradise, and her children have now to suffer for the sin of their first parent.

The myth as current among the Déné (Carrier and Chippewayan) and the Algonquin (Blackfeet) tribes is rendered even more significant by the fact that even in far-off Ceylon, the natives venerate a statue representing the first woman naked and with a snake coiled round her. Now that woman is represented there *headless* and *at the door* of the temples, while her head is, according to Petitot³, placed on the outside of houses as a talisman against her own malefic powers.

As to the two serpents of the Carrier myth, the duality of the reptile is a matter of mere mysticism of numbers. The sacredness of the number seven among the Semitic nations is well known. Persons ever so little conversant with American mythology are no less aware of the frequent occurrence in native legends of the number four and the mystic virtue

¹ A study of Pueblo Architecture, by Victor Mindeleff. Eighth Annual Report Bur. Ethnol., 1891, p. 17.

² Rev. S. D. Peet in Am. Antiq., Vol. XVI, p. 30.

³ *Traditions indiennes du Nord-Ouest*, p. 393.

supposed to be attached thereto. Thus, to choose an example among hundreds, according to the Navajos, the adopted daughter of the first woman reached maturity in four days; a stranger appeared to her in the woods on four successive days, with whom she thereafter passed four nights. Four days afterwards she gave birth to twins, who in four days grew to manhood, and for four days more remained near the place of their birth. Having gone to the house of their father, who was no other than the sun, the latter's wife was asked four times what had become of them, and, upon their being delivered up to their father, the sun impaled them on spikes of iron set up at each of the four corners of the earth, etc.¹ The same tribe's mythology speaks constantly of four worlds, four winds, four mountains, etc. Folk-lorists are well aware of the fact that the Mayas, the Aztecs, the Sioux, the Algonquins, in fact almost all other American tribes, attach the same importance to the number four².

Now, by a curious exception, this is replaced among the Carriers—and possibly among other adjacent tribes—by the number two. Thus in the preceding myth, mention is made of two serpents when one would have done just as well for the purpose; the unfaithful wife has two sons; her head is swallowed by two whales (a circumstance rather hard to account for!); the old man with the precious raft has two daughters, and kills people by means of two serpents. The thunder-bird has likewise two daughters. Finally two animals are taken on the Déné Noah's raft, and the hero does not settle on the new land before the wolf has gone twice to explore it. Another myth recounting the deeds of a sort of Carrier Hercules mentions among the latter's victims two giant snakes, two giant toads, two giant spiders, etc.

¹ A part of the Navajo's mythology, by W. Matthews, *Am. Antiq.*, April 1883.

² Speaking of the symbolism of the number four, I cannot refrain from hazarding a remark which may have its usefulness. There is a very prevalent disposition on the part of such folklorists as look to nature and the natural phenomena exclusively for an explanation of native myths, to see in the cardinal points north, south, east and west, the chief reason of the sacredness or of the widespread use of the number four among American aborigines. Their theory is probably grounded on fact as regards certain southern, half-civilized tribes; but I cannot help thinking that, in some cases at least, their explanation is wide of the mark. It should not be forgotten that the points of the compass are but imaginary divisions of space introduced for the sake of convenience by the abstract-grasping mind of the white and other superior races. At all events, some American tribes hardly know any such divisions. This is so true that the Carriers, whose vocabulary possesses some abstract terms, have not even any name for these would-be all important cardinal points. With them the east is *sa pa'arih t'séh*, "whence the sun rises up;" the west, *sa na'a'ih t'séh*, "where the sun sets;" the north, *ho'kwaz t'sa*, "the direction of the cold," etc., all explicative phrases, but no real words. Yet their language is rich in locative terms, most of which express some reference to a piece of water, lake or river. Such are, for instance, *mi*, "up" (*i.e.*, up stream or opposite to the outlet of a lake); *nta*, "down" (stream); *no*, "inland" (*i.e.*, away from the water); *ntson*, "down," towards the shore, etc., etc.

Therefore the two adulterous serpents of our present legend can be considered as one.

A detail which the reader may have noticed in that legend is that the injured husband sets ajar by means of splinters the mouth and eyes of the decapitated snakes. As this circumstance occurs twice in the course of the same story, it is evidently mentioned on purpose. What that purpose may be is more than I can say. Is it revengeful irony at the now helpless condition of the monster, or allegorical of its malice as the source of all evil? An important analogy might be found between this point of the myth and the style of drawing serpent heads common to the semi-civilized nations of Mexico and Peru. On the codices, these heads are generally remarkable for their mouth kept yawning by means of what



Serpent Heads from the Codices.

looks more like extraneous adjuncts than natural teeth. I herewith figure two examples in confirmation of my remark.

Another point of the native theogony perhaps worth noticing is the supposed efficacy of the act of jumping across a subject. Thus the Child of our tradition jumps across the corpse of his metempsychosed father-in-law, who thereby recovers life. So he does later on, and with similar results, with regard to the bones of his brother. This act must have had to the original Indian mind a hidden meaning; for we find that the Kutchin or Loucheux of the Mackenzie River, in common with the Hare Indians, have a periodic festival, not unlike the Phaset of the Hebrews, on the occasion of which the death chant is sung, thus: "O mouse with the pointed nose¹, hasten to jump twice across the face of the earth²!" One feels inclined to hazard as a possible explanation the Egyptian cross, the key of life and health and its probable equivalent on the ancient tau-shaped coppers of the North Pacific tribes, both of which were perhaps nothing else than the symbol of the daily course of the life-giving sun across the heavens. If this be the case, our Indians have long lost all idea of the true signification of this mysterious act.

Might not the flight and vicissitudes of the two Carrier heroes pursued

¹The French *musaraigne*. ²*Traditions indiennes*, etc., pp. 62 et 186.

by their mother's head be considered as a vague reminiscence of the continual journeying of the Hebrews led by the two brothers, Moses and Aaron, away from the land of Egypt which had nursed them for four centuries? There would be nothing very extraordinary in one point of a native myth recalling two facts of analogous nature. The issue of the feud between pursuer and pursued, at least, seems in both cases strikingly similar. After having pursued by land the fugitive Israelites, Pharaoh, reaching the shores of the opened Red Sea, makes bold to follow therein the tracks of his former slaves. But Moses stretches forth his hand over the sea and his pursuer comes to grief together with his army, all being drowned by the return of the waters. In like manner, the Déné Moses long followed by the head of his mother, finally comes upon a large lake which he crosses in a miraculous way. As his tormentor is still after him, even in the middle of the lake, he stretches forth his wonder-working dagger, whereupon his enemy is instantly drowned, or devoured by a monster fish, which is practically the same.

The Carrier hero's adventure on top of the mountain and his meeting with the thunder's children, followed by their father's anger, have counterparts in the mythology of no less than three different native tribes east of the Rockies. It would be too long to reproduce each of them. This part of the myth being so widely-spread must have some importance. Might it not be a vague reminiscence of the giving of the tables of the law to Moses amidst the peals of thunder on the Mount of Sinai and of the casting away of the same at the sight of the prevarication of Israel? The anger of the Carrier hero who throws the bundle of feathers in the fires, the ashes of which finally cover up the old man who has treacherously left him for dead on the mountain, might then recall to mind the irritation of Moses caused by the unfaithful Israelites who had abandoned him and were despairing of his ever coming back to them, and who, on his return, were compelled to swallow the very ashes of the golden calf. This, however, might be too far-fetched, and is given simply as a hint to lovers of identifications.

Another part of the myth which I feel much bolder in assimilating to the Biblical narrative, is the end of the Carrier text. This, I think, everybody will agree, unmistakably points to the destruction of mankind by the deluge. In Moses' account of the cataclysm, mankind is punished for its sins by a flood, the waters of which cover the highest mountains and from which only Noah and his family escape, being floated on the waters by the ark. In the Déné narrative, the waters similarly reach above the highest peaks, and the deluge immediately follows the wrongs

inflicted by the dwarfs on the brother of the hero, Hstas , who appears here in the combined role of Noah and of Jehovah.

When the waters have subsided somewhat, the Biblical Noah sent out a raven "which went forth and did not return till the waters were dried up upon the earth¹." The Carrier Noah sends down the beaver and the muskrat, which do not return until one of them brings up a little mud.

Moses' Noah then sends forth a dove "to see if the waters had not ceased upon the face of the earth,"² which returns as a sign that the land is not yet fit for man to inhabit. Likewise the hero of the Carrier legend sends out the wolf to see if the island is inhabitable, with the result that it soon returns with the silent message that it is as yet unfit for him to dwell upon. It is not before a second trial, the equivalent of the second sending of the dove, that he is told by the howling of the wolf, as Noah was by the carrying of the bough of the olive tree, that the earth is henceforth fit again for habitation.

Nobody, disbelieving the autochthony of our Indians, will be astonished to find the remembrance of the deluge vivid among them. That tradition is universal throughout the old world. It is to be found, under one form or another, among the principal nations of antiquity no less than among the aborigines of the new world. Noah and his ark have their counterparts in most of the known mythologies. Everybody is acquainted with the Deucalion Sisyphes of the Greeks: now that personage has duplicates in the Xisuthrus of the Chaldeans, the Yima of the Iranians, the Khasisatra of the Babylonian inscriptions, the Manu of the Hindoos and the Fo-hi of the Chinese.

The universality of the tradition baffles all attempts at incredulity on the part of the most hardened sceptic. What is not quite so clear is the question as to the extent the catastrophe really prevailed. Three different views have been advanced on the subject. There is the opinion, now held by few well informed writers, that the deluge was universal both geographically and ethnographically. The second view, which is now very prevalent among competent critics of all creeds and nationalities, estimates that it was indeed universal ethnographically, but not geographically. Lastly a third opinion, which is held by authors of repute and undoubted orthodoxy, would have it that the catastrophe had no really universal effects, either as regards the earth, or relatively to its inhabitants.

These remarks may appear in the light of an unnecessary digression ;

¹ Gen. viii., 7.

² *Ibid.*

but if digression there be, I think it is not without its usefulness in a paper on Indian traditions. This is my point :

If the Noachian deluge was universal neither geographically nor ethnographically speaking, our aborigines must be assigned a probable Asiatic origin, either by descent or by contact, since they have not forgotten that event. Asiatic, have I said : they could not be represented as coming from Africa, for all the black races are remarkable for the absence in their mythology of any allusion to the deluge. Moreover, the physiological differences between the Africans and the Americans are, of course, too pronounced to admit of any serious comparison between the two races. They could not be said to originate from Oceanica, since the inhabitants of that part of the world are no less devoid of any tradition traceable to the deluge. They could hardly be represented as of European origin, as, in the third hypothesis relatively to the extent of the cataclysm, the flood is not supposed to have extended to that continent, and the few versions of the Noachian deluge found among its primitive inhabitants are of too vague a character to have stood the assault of ages among the uncultured savages who would be supposed to have derived their present traditions on the subject from the original European peoples.

But, a student of the Algonquin mythology will object, the story of the floating raft and the muskrat refers, not to the deluge, but to the creation. I have noticed that position taken by a commentator on a Blackfoot equivalent of that portion of the Carrier myth, and even Dr. D. G. Brinton, who sees therein neither creation nor historical deluge, calls it "the national myth of creation of the Algonquin tribes."¹ In answer to that objection, I need only refer the reader to the Carrier version such as presented above, wherein we see the earth peopled before the catastrophe and a gradual submersion of the globe. In confirmation of this might also be adduced the fact that the Indians referring to that event never call it the creation or re-creation of the world, but most pointedly to *ʔa-tha-dathéʔən* which means "the filling up with water."²

To make it doubly sure that the end of the Carrier myth really refers to the deluge, I reproduce here, after Petitot, the corresponding tradition current among the Hare Indians, their congeners in the North-East. It will be seen that the latter can be identified with even less difficulty with the

¹ American Hero-Myths, p. 41.

² The expression is thus analysed : *to*, up, an adverbial form which requires immediate and intimate connection with the verb ; *ʔa*, sign of the past tense proper to the actualitive form of some verbs ; *dathéʔən* means "filled," and implies at the same time the beginning of a past action.

Mosaical account. After several details practically identical with those of the Carrier legend, such as the quest for arrow-shafts and arrow-feathering, with the adventure with the thunder-bird and its children replaced here by the eagle and the eaglets, the Hare story goes on to say:—

“Then the Wise One made a great raft at the horizon¹. ‘What do you mean with this raft?’ they said. Then he said: ‘If² plenty of water comes, I will go aboard.’ ‘Oh! as for us we will climb up the trees,’ they said. ‘Then as for me, if² there is a flood, I will stay on the raft,’ he said.

“It being so, he made big ropes so and so, worked with many things and made a big raft.

“Therefore the water seemed suddenly to thunder forth, all men climbed on the trees, there came plenty of water, all men perished. Therefore the Wise One having tied his raft with ropes, was floating along. He also placed on his raft pairs of animals, of carnivores and of birds.

“‘There will be no more land,’ he said to them. For a long time there was no more land: it was being said that there was no one to go in search of land. The muskrat dived and went in search of land. He came up to the surface almost dead. ‘Nothing at all!’ he said . . . The beaver having dived after him, was not seen any more for a long time; but afterwards he came up swimming, having a little mud in his hand which he gave to the Wise One. The old man put it on the water. As he wanted the earth to exist again, he blew on the mud, making it a little big. He placed on it a beautiful little bird, whereby it became still larger. Then he let out on the land a fox which ran around it and made it grow still more. He slept once, twice, thrice, four, five, six times running around it³; whereby it became whole⁴.

“The Wise One having put back the animals on the earth, he landed himself with his children. ‘What a number of men there shall be again on the earth!’ he said. Then there were again many men⁵.”

As hinted above, the Algonquin tribes have a myth wherein the muskrat plays exactly the same role as in the Carrier legend and the beaver in its counterpart among the Hare Indians. The only difference in the

¹ Literally, at the edge of the sky.

² *If* and *when* are rendered by the same word in Déné.

³ That is, the fox ran around it on six consecutive days.

⁴ *I.e.*, came back to its normal state of existence.

⁵ *Traditions indiennes du Canada Nord-Ouest*, p. 129.

narratives is that the Justas of the one and the Wise One of the other are replaced in *some* Algonquin versions by Michabo, the "Great Rabbit." It has been fashionable in certain quarters to indulge in covert sneers at the expense of those who see in some native legends an echo of the past rather than mysterious, enigmatic personifications of natural phenomena. Therefore I will now give in a condensed form the explanation of that myth proposed as the only true one by the most prominent among the allegorical school of folk-lorists, Dr. D. G. Brinton, leaving it to the reader to decide whether his subtleties of speech are more convincing than my own interpretation of the same story.

"In the Algonquin tongue the word for Giant Rabbit is *Missabos*, compounded from *Mitchi* or *Missi*, great, large, and *wabos*, a rabbit. But there is a whole class of related words . . . which sound very much like *wabos*. They are from a general root *wab*, which goes to form such words of related signification as *wabi*, he sees, *waban*, the east, the Orient, *wabish*, white, *bidaban* (*bid-waban*), the dawn, *wában*, daylight, *wasseia*, the light, and many others. Here is where we are to look for the real meaning of the name *Missabos*. It originally meant the Great Light. . . . I believe that a similar analysis will explain the part which the muskrat plays in the story. . . . The word for muskrat in Algonquin is *wajashk*, the first letter of which often suffers elision. . . . But this is almost the word for mud, wet earth, soil, *ajiski*. There is no reasonable doubt but that here again otosis and personification came in and gave the form and name of an animal to the original simple statement. *That statement was that from wet mud dried by the sunlight, the solid earth was formed*¹."

The italics are mine.

In rebuttal of the above, I beg to submit that even in some Algonquin versions² Michabo or *Missabos* is replaced by the Old One, and in that case the ingenious fabric of Dr. Brinton loses its *raison d'être*. Furthermore, even when the Algonquin hero's personality remains of an animal character, his name varies from Michabo to Manibozho, Nanabush, Messou, Mideathon and Hiawatha³, which I suppose could not be diverted into meaning the Great Light, etc. As to the identification of the muskrat with the wet earth, the soil, through the quasi-homonymy

¹ American Hero-Myths, p. 41-42.

² As in that current among the Blackfeet. See "The Owl," University of Ottawa, May 1890, p. 298.

³ Notes on Primitive Man in Ontario, by David Boyle. Toronto, 1895, p. 18. It may be added that some Algonquins credit the osprey with the success generally attributed to the muskrat.

of the name of both in one Algonquin dialect, if Dr. Brinton's interpretation be the correct one, it must be paramount to stating that the myth itself has an Algonquin origin, since the same play with the words is impossible in connection with their Déné names (*yən* and *tse'-kér*). Is there any real proof of this priority of origin?

II.—THE BURNING DOWN OF A COUNTRY.

Told by Abel Nəthətcas, Chief of Thatce, on Lake Stuart.

A young man was living with a young woman. All the other women were bringing to their husbands basketsful¹ of 'kərmih² or sap; and yet his wife used to come home with a single shaving of it which she brought him in the hand. He wished to ascertain the reason of this; therefore he followed her one day at a distance. As soon as her fellow-women had reached a place in the woods planted with scrub pines, he saw her proceed on her way, while the others were busying themselves with the scraping of the sap.

When she had reached the trunk of a tree, dried up but still standing, she commenced striking it with a stick, repeating each time: *kəlég!* *kəlég!*³. Soon a beautiful young man, white as daylight, came out of the top of the tree and played with her.

Thus the young man knew why his wife used to bring him so little sap; so he returned home and arrived there before she got back. Then his wife scraped off as usual a single ribbon of 'kərmih, and took it home to her husband, carrying it in the hand.

One day that she was to return with the other women to collect sap the young man said to her: "Really you do bring me too little 'kərmih. See how the other women are always loaded when they come home. Therefore, lend me your blanket⁴ and your scraper: I will go for it myself."

So he said, and then he clothed himself with his wife's garments and went with the other women, packing an empty *tcajyaŋ*⁵. But he stopped not with them among the scrub pines; he went on as far as the dried up

¹ *Tcajyaŋ tizpən*. The *tcajyaŋ* cannot quite properly be called a basket, but it is its equivalent among our Indians. For figure and description of the utensil, see *Notes on the Western Dénés*, Trans. Can. Inst., Vol. IV., p. 120.

² The 'kərmih is the sap or cambium layer of the scrub pine (*P. contorta*), scraped off in thin shavings by means of a bone scraper. *Op. cit.*, p. 76.

³ Words now devoid of meaning, at least among our Indians.

⁴ That is her outer garment.

⁵ See note ¹ above.

tree. Immediately he set upon striking it with a stick, repeating the words he had heard his wife utter.

Soon enough the beautiful young man white as daylight made his appearance, fell down upon the disguised husband and played with him as one would with a woman. He was trying to know him¹, when the husband cut his head and testicles off with a knife he had kept concealed in his bosom². The head was no sooner separated from the trunk than it was changed into a red woodpecker's scalp. Then he scraped off a great quantity of sap. When he had filled up his *tcaɣaɣ* therewith, he hid among the shavings of the 'kərmih what he had torn from the daylight young man.

Home again, he presented his wife with the whole, saying: "See what a load of sap I have brought you. Eat it." She therefore began to eat of the 'kərmih, suspecting nothing. But as soon as she had seen the red woodpecker's scalp, she hung down her head, refused to eat any more and commenced to weep. "What ails you?³ Why weep you?" asked her husband. But she answered not and continued weeping.

At the same time columns of smoke were seen all around and tongues of fire appeared on all sides. They soon concentrated themselves towards the point where the couple stood. Very many men perished by fire; only a few escaped.

Meanwhile the red-headed woodpecker⁴ was flying to and fro amidst the smoke and flames repeating its usual cry: *tcān! tcān!*⁵ This caused a few drops of rain to fall which, however, had no marked effect on the conflagration. Then he was heard to say: "Let the scalp of my cousin⁶ be given back to me!" For a time people did not know what he meant. At last some one remarked: "Since he wants his cousin's scalp, let it be thrown up⁷ to him!" Therefore, while the little woodpecker was flying amidst the flames, the red woodpecker's head⁸ was thrown up to him.

A shower fell at once, which soon extinguished the fire. But in his

¹ In the Biblical sense of the word.

² In the Carrier mythology, weapons carried in the bosom are always for a nefarious purpose. See first legend, p. 4, also "Notes on the Western Dénés," p. 52.

³ *Tānqa?* lit., "What are you feeling?"

⁴ *Melanerpes erythrocephalus*; in Carrier, *tseɽkən*, "red-head."

⁵ *Tcān*, which to the native ear represents that bird's cry, means "rain" in Carrier.

⁶ I.e., the red woodpecker (*Sphyrapicus varius*).

⁷ To throw to and present with are rendered by the same word in Carrier.

⁸ The similarity of names renders this part of the myth rather obscure in English. This is not the case in Carrier, where the smaller woodpecker is called *tseɽkən*, whilst its "cousin" goes by the name of *intziɣ*.

efforts to attract attention, the little woodpecker got the end of his tail burnt, and this explains why it is to this day coal-coloured.

COMMENTS.

This is one of the shortest of the Carrier legends. It is either an idle tale, to while away the long night hours of a hyperborean winter; an allegory concealing under a circuitous phraseology a truth of more or less importance or some cosmogonical phenomenon, or again a legend to be considered as a feeble echo of a historical event. The first hypothesis is, to my mind, entirely gratuitous. Aboriginal tales do not, as a rule, web their fallacious thread around a moral thesis of such an extraordinary description as that pointed out in our myth. There is no lack among our Indians of fabulous stories which are real meaningless tales; it would suffice to reproduce one here to make the difference between them and the above plain beyond dispute. If an allegory, I would ask: Where have our people gone for the subject matter, sodomy, to be thereby re-proved? They know the crime neither in name nor in deed. Or, again, what natural phenomenon could be said to be thereby hinted at? There remains the third hypothesis which may be a mere supposition, yet a supposition with something like a basis and not a little probability in its favour.

The very title of the story is, in the native tongue, grammatically mysterious and mythologically suggestive. *Intziq 'qa hwotattik'kan*, the name it receives in the various versions, means literally: "He (or it) burned down (a country or a town or the universe¹) against (*i.e.*, in opposition to, in punishment of) the Red Woodpecker." *Hwotattik'kan* is a transitive verb and as such it must have not only a subject but a complement, expressed or implied. What is the subject? Is it *Yuttore*², the impersonal Deity of the ancient Carriers? It would seem that none other could be imagined. As for the implied complement, it must refer to some locality, not the whole universe, since the text affirms positively that some men escaped from the conflagration. We are thus warranted in translating the title: A country was burned down by the Deity in punishment for the Red Woodpecker's misdeeds.

Barring the mention of the bird's name, which is here evidently symbolical, I would ask in all frankness: Does history record the burning of any other inhabited region than that of the famous cities of the plain,

¹ Were not an extent of country, town or district, implied, the verb would be *tattik'kan*, not *hwotattik'kan*.

² Lit., "that which is on high." See "The Western Dénés," Proceedings Can. Inst., Vol. VII, p. 157.

Sodom and Gomorrha? It may seem strange that a historical event of comparatively so local an importance should be commemorated in the folk-lore of an American people. Yet it might perhaps be explained that the awfulness of its nature compensates for the limitedness of the territory which it affected. I may be mistaken in my interpretation of this, as indeed in that of the preceding myth; but I cannot help seeing therein some resemblance to the story of Sodom's prevarication and chastisement, and a corresponding dissimilitude from any other event recorded either by history or mythology. Let us rather analyse the main points of our present legend and compare them with the Biblical recital.

And here I must premise an important remark. This myth, in common with the preceding, recounts the story of a crime and its consequences; but a very little reflection will make it clear that the guilt pointed out as material for punishment is, in the second legend, of a quite different nature from that of the first. In the first story, we see criminal relations of a woman with a serpent punished by the death of the woman and the wretchedness of her children. In the second, we have also guilty intercourse of a married woman with a person other than her husband; but, let it be carefully noted, this is not put down as the cause of the conflagration that ensues. After her unseemly conduct, the woman suffers no other pain or anguish than regret for the death of her lover, while the whole country, and with it a large portion of the people, are burnt down in expiation of the attempted crime of the beautiful young man with the outraged husband. Can sodomy be more graphically described or its punishment better assimilated to that of the ungodly inhabitants of the plain cities?

The husband here, no less than the God-fearing Lot of the Bible, escapes free; while the cause of the conflagration, the voluptuous young man, in common with the majority of the population, pays with his life his unnatural crime.

The gathering of the sap or cambium layer of the pine with the apologue of the little red-headed woodpecker are naturally nothing else than the pod which contains the fruit, the shell that conceals the pearl, namely, the historical fact. So much so, that these circumstances vary with the locality of the narrator, while the nature of the guilt itself with its consequences remains identical.

The native fondness for the apologue is no doubt responsible for the anecdote at the end, no less than for the transformation of the young man's head into a bird's scalp. Unable to account for the fact related by their ancestors, the aborigines must have thought they had discovered

in nature an adequate explanation of it. The woodpecker (*intzi*) is fire-coloured; therefore to it must be ascribed the cause of the raging flames. Its congener, the *tsèl'kən*, is fond of crying for rain: *tan! tan!* Who else then could have been instrumental in extinguishing the fire? This is what is called fiction; it widely differs from the part of the tradition above commented on.

But, a reader may object, if such a characteristically Jewish tradition has found its way even into far-off America, must not the aborigines who now relate it be assigned a similarly Jewish origin? Now, has not this theory been exploded long ago? To which I beg to answer:—

To conclude from this single fact to a Jewish or simply Semitic origin for our Indians, would be to outreach the premises. On the other hand, to pretend that their ancestors have had no intercourse, direct or indirect, even possibly by intermarriages, with a population of Semitic descent is, I think, more than could consistently be done. I am not here to discuss the origin of the Dénés, a question on which, I repeat, I have no fixed convictions; but I may be permitted to remark that several peculiarities of their mode of life, their customs, their language, and even some of their mythological allusions¹ would assign them a mixed origin. As the question at present stands, they cannot be considered as autochthonous on the American continent; several of the traditions of the Eastern Dénés point to a western region as the place of the tribes' birth. Now, west of their present territory you are confronted by the North Pacific Coast. If the aboriginal hordes crossed from Asia to America, a journey entailing but very little difficulty, what would prevent their having been in contact with populations initiated into the theogony of the Jews and the principal points of their wonderful history? It is well known that the world-wide dispersion of that nation does not date from the destruction of Jerusalem by the Romans. Clannish as they are, the Jews have, from time immemorial, been more or less cosmopolitan. Even before the famous Babylonish captivity, they were to be found throughout the larger part of the Asiatic continent. In 719 B.C., Salmanassar, king of the Assyrians, had transported the inhabitants of Samaria into the most remote village of Media. In 676 B.C. Assaharaddon distributed the remnant of the kingdoms of Syria and Israel over Persia, Media and the distant provinces of the East. Dispersed after the captivity of Babylon over the whole of the then known Asia, the Israelites of the ten tribes proceeded in numerous caravans to Persia, India, Thibet and even China. Their first migration into the latter country appears to have taken place over 2000 years ago under the dynasty of the Khars. They numbered

¹ See first part of third legend.

70 families, all of the same name, which were soon dispersed into several cities, even in Peking¹. At length, according to Strabo, who wrote in the days of Pompey and Caesar, "the Jews were scattered into all the cities, and it was not easy to find a spot on earth which had not received them and where they were not settled."

Speaking only of Asia, we find that in 878 of the Christian era, Hoang-Tchas, the founder of a Chinese dynasty, having taken the town of Kahn-Fou, which had shut its gates against him, he put to the sword 120,000 of its inhabitants, among whom Jews and Christians are mentioned.²

Describing his vast dominions, the famous and somewhat enigmatic Prester John said in his letter addressed in 1165 to the emperor of Constantinople, and regarded by some as authentic: "Beyond that river are ten Jewish tribes who, although they choose their own kings, are nevertheless the slaves and tributaries of our Excellency³."

The great Kublai-Khan, though a Buddhist by religion, is reported to have been tolerant towards all creeds, notably that of the Jews. He said that there were four great prophets, Jesus Christ, Mahomet, Moses and Chakia-Mouni. His army, which was composed of troops from all the countries that paid tribute to him, counted Jews and Mohammedans who were numerous enough to be constantly mocking the Christians. Now his empire comprehended the whole of China, Corea, Thibet, Tonquin and Cochinchina, a great part of India beyond the Ganges, many islands of the Indian Ocean, and the whole north of the continent of Asia from the Pacific to the Dnieper.

Lastly, André de Pèrouse wrote in 1326 that in the empire of the great Khan, one of the latter's successors, there were men of all nations under the sun, adding that among the Jews no conversions had been made⁴.

Now, as the Biblical traditions accompanied the Jews in all their migrations, and as the latter were then, as they are now, very tenacious of their faith, if there were anything to be surprised at, it would be that after this, people should manifest surprise at finding among the Asiatic nations, and through them among the American aborigines, Biblical reminiscences either in their customs or in their mythology.

But I am drifting on to slippery ground. This is not the time to seek

¹ M. d'Escayrac de Lanture, quoted by *La France Juive*, by Ed. Drumont, Vol. I., p. 47.

² *Christianism in China, etc.*, by the Abbé Huc, Vol. I., p. 85.

³ *Ibid*, p. 93.

⁴ Wadding, *Annales Minorum*, Vol. VI., p. 56.

out the origin of our Indians; let us return to our legends. I have said that our Dénés seem to be of mixed blood; the following myth will perhaps strengthen us in that opinion.

III.—MADE CELESTIAL.¹

Told by Zacharie Nusthel (Wolverine), of Stella.

A tæneza² had a daughter, and she was a virgin³. He made her pass every night quite close to his pillow, for he was rearing her with the greatest care. Many a young man asked for her⁴, but in vain: her father would not part with her.

Now it happened that on several nights the maiden awoke suddenly and then was aware that somebody was getting away from her. She wanted to know who it was; she guessed indeed that she was being abused during her sleep. Therefore she filled a little satchel with vermilion and placed it near her pillow. The following night she threw the vermilion at her violator before he had time to get out of the lodge. On the morrow, she inspected all by herself a crowd of young men who were playing at the end of the village⁵, but all to no purpose. As she was returning to her father's habitation, she noticed an old snotty dog spotted on the shoulders with her vermilion. Her heart was exceedingly sorry at seeing this. At the same time she became conscious of having conceived, and after a while people knew that she was pregnant.

Therefore her father, being a nobleman, prepared a lot of tanned skins. Laid one over another, they formed a pile as high as the width of one's hand. These were to serve as a bed for his daughter's delivery⁶ and afterwards to be distributed to his fellow-villagers to celebrate⁷ the birth of his grandchild.

After a short period of pregnancy, as short as that of dogs, the girl was delivered of four little ones, all dogs, three males and one female. Their

¹This is a rather free translation of its Indian title: *ya-ké-ntitil*, "they arrived on the sky."

²Or hereditary nobleman. See "The Western Dénés," Proceedings Can. Inst., Vol. VII.

³*Sak-āsta*, lit., "she is sitting alone." The virginity of such persons had nothing very meritorious in itself, as it was all but voluntary. It consisted simply in constant seclusion enforced *volens volens* on the girl by the parents.

⁴*ʔane aiqa-otin*, i.e., wanted to marry her.

⁵Carrier villages consisted very generally of a single row of lodges terminated by the funeral posts, the ground of which served at the same time as campus or play-ground.

⁶Illegitimate births were not looked upon by Carriers with the same degree of shame as they now inspire.

⁷Or atone for. See "The Western Dénés," Proc. Can. Inst., Vol. VII., p. 164.

grandfather was so mad at this that he tore the dressed skins off from under them and cast them in the fire. Then he packed all his belongings and, going away together with his wife, he abandoned his daughter. All the inhabitants of the village did likewise, and they migrated to a distant country; for they were too much ashamed. Moreover, to cause the death of the woman and of her little dogs, they carefully extinguished the fire of each lodge¹. But an old woman there was who thought herself unable to undertake a long journey. She succeeded in snatching away by stealth a firebrand, which she concealed until all had left. This fire prevented them from dying of cold and hunger.

Shortly after she had been abandoned, the mother of the little dogs heard a slight noise as of the gnawing of a piece of wood. She soon perceived that a rabbit had made a hole in the board wall of the lodge. A like hole was afterwards made by rabbits at each of the other walls. At each of them the mother set a snare wherewith she soon caught plenty of rabbits. Their flesh she ate herself, and with their skins she made blankets for her little ones. The latter grew up very fast, and they seemed to be very fond of play.

Now it happened that their mother left one day to gather at some short distance bear-berries² for the family. When she got back, she saw on the floor of the lodge many human foot-prints, and perceived that the whole house was full of dust as if a dance had been in progress. She was very much surprised at this. So she set her mind upon discovering who had made the foot-prints. Therefore, she left again as usual to pick up bear-berries. But once arrived at the place where the fruit was abundant, she disposed her blanket as a mannequin, which she laid up against a stump. She wanted thereby to deceive her little dogs and make them believe that she was still at the berries.

Meantime she returned by a round-about way to the lodge. She surprised the little ones dancing without their dog-skins, while their sister was keeping watch over the mannequin. By a rapid movement, their mother seized the skins of the three dogs now become boys, and threw them in the fire. Their sister-dog had come out of her skin as far down as the waist only; she had time to re-enter it before her mother could snatch it away from her. Therefore, she remained a she-dog forever. "Then you are men after all, and yet it is on account of you that I have become so wretched!" exclaimed their mother as she burned their spoils.

¹ The fire-drill or *tcou-tjij* was known to the primitive Carriers, but the critical condition of the mother and the degree of decrepitude of the old woman rendered its preparation and use impossible.

² Vulgarly called kinnikinik (*Arctostaphylos uva ursi*).

She then made the three brothers a wooden arrow and began to exercise them to the hunt. Therefore they went out with their sister, who henceforth was to act as their hound. She was soon heard barking at a grouse. But her brothers knew not what to do. So they dispatched one of themselves to their mother for advice and directions. "Mother," said he, "our little sister-dog¹ is barking at something perched on a tree. It is all grey, covered with feathers and down, and looks down at us. What is it, and what shall we do with it?" Then his mother answered, saying: "My son, this is what we call a bird. It is good to eat. Let them kill it with their wooden arrow." Thereupon her son ran back to his brothers, who shot the grouse, after which they killed great numbers of like fowl.

Their mother next made them a stone-tipped arrow, and again sent them out hunting. Soon thereafter, one of them came back to consult her in the name of his brothers. "Mother," he said, in arriving, "our little sister-dog is barking at something with short ears and grey neck. What is it, and what shall we do with it?" Then his mother answered, saying: "My son, this is what is called a fisher. Its fur is used to make blankets with. Let them shoot it with their stone-tipped arrow." This they did, and subsequently they killed large numbers of similar animals.

Another day that they had gone as usual on a hunting expedition, one of them came back to consult again their mother, saying: "Mother, our little sister-dog is barking at something long; it is grey all over and has a short nose and a rounded head. What is it, and what shall we do with it?" Their mother made answer thus: "My son, this is what is called a lynx. Its skin is that wherewith blankets are chiefly made. Let them kill it with their arrow." They shot it, and afterwards many an animal of the same kind.

Another day one of them came back again from the chase to take advice from his mother. "Mother," he said, "our little sister-dog is barking after something which is big, very black and has no tail. It is grunting at us. What is it, and what shall we do with it?" Then their mother answered: "My son, this is what is called a bear. Its flesh is good to eat. Let them shoot it with their arrow." They killed it, and thereafter a great number of bears.

Still another day they sent one of themselves to consult their mother. He said to her: "Mother, our little sister-dog is barking at something very big and all grey. It seems very bad-tempered and angry, as it is constantly rushing at her; but she is so swift-footed that she successfully avoids it. What is it, and what shall we do with it?" "This must be a

¹ *Netis-jit'sé*, our younger sister-dog, in the same sense as Jacob was Esau's junior.

grizzly bear, my son," said his mother. "It is also occasionally eaten. Therefore let them kill it." So they did, and thenceforth they killed great numbers of those animals.

Another day that one of them had returned from the chase to take advice from his mother, he said to her: "Mother, our little sister-dog is pursuing an animal which has long legs and on the head something resembling the upright roots of a fallen tree¹. What is it and what shall we do with it?" Then she made answer thus: "My son, that animal is called a caribou. Its meat is very good, and its skin serves to make moccasins with. Let them shoot it." Therefore they shot it, and afterwards many more caribou.

Lastly, one day that one of them was again consulting his mother, he said to her: "Mother, our little sister-dog is chasing a very large animal not unlike the caribou, but bigger. What can it be and what to do with it?" Upon which his mother said in answer: "My son, this is what we call a moose. Its flesh is excellent, and its skin is also very useful. Let them shoot it." After they had shot it, they also killed many more moose.

They were now exercised to hunt all kinds of animals, and they had grown to be young men and successful hunters. In recognition of the service rendered their mother by the old woman who had preserved fire for her at the time that she had been abandoned, they used to present her, after each hunt, with the fat of the animals mixed with their blood. One day that they wanted to fool her, they mixed pieces of rotten wood with blood and offered the whole to her, saying: "Grandmother², fry this fat mixed with blood which we give you as is our wont." The old woman did as she was bid, but she soon detected the fraud, upon which she exclaimed: "*Passa! ya'téh'gènuhtij!*"³ Oh! may you be translated up to the sky!" For she was indeed very angry.

Now it came to pass that a short time afterwards their sister-dog scented a herd of caribou. They set at once in pursuit of the game. Far, very far away they ran on the tracks of their sister-dog, and yet they could not catch up with her. The more they advanced, the higher up they were going. At length, after a very long chase, one of the three thought of sitting down to rest awhile. Looking back, he discovered that they had reached the sky, and then he was terrified indeed. He

¹ *Raz*, a primary root, means all that.

² In the Déné legends, the old women are always addressed as grandmothers.

³ Archaic form of words in the Lower Carrier dialect. *Passa!* has no modern equivalent and is expressive of spite and rage.

told his brothers and they looked down. Then they also felt their hearts falling down at this. After a little time, they held consultation together as to the best means of returning to the earth. Then, on the advice of the eldest but one, they dropped down the little packages of dried salmon¹ which each of them had carried so far as provisions for the journey. They hung underneath a grey jay, and carefully cautioned the bird not to look up until they had all got back to their country. They expected to be taken down to the earth along with the flying bird. But the jay could not resist the temptation of taking a look at the salmon which he considered as his prospective prey. Therefore the whole assemblage of the three brothers with their packages of salmon underneath was fixed forever in the sky, men and salmon being changed into stars.

These we now see every clear night. The three brothers we call *Em'təŋ* or the Pursuers². Their sister underwent a like transformation, and we can also see her a short distance off under the shape of a solitary star. Ahead of the whole is *Səmł̄nu*³ which is nothing else than the herd of caribou chased by the three brothers. Those stars are always scintillating as if constantly on the move. This is because the caribou are fleeing from the three brothers. In a straight line beneath the hunters are three smaller stars; they are the packages of salmon changed into stars by the curiosity of the jay. As for the bird, he flew away, and therefore he cannot now be seen.

When the mother of the three brothers and of the she-dog saw that the sun had disappeared below the horizon without their coming back, she became very anxious; for they used to return home by daylight⁴. At last, having accidentally looked up to the heavens, she beheld them there stationary under the form of stars. Mad with sorrow and guessing that this was due to the witchcraft of the old woman, she ran out to her and loaded her with a coiled-root basket⁵ full of burning coals which she placed on her back, constantly to pack thereafter. Then she thrust a roasting-spit through her and hurled her up to the East, saying, "Henceforth you shall be she after whom daylight comes⁶." The old woman

¹ The daily bread of the Carriers.

² Orion.

³ The Pleiades. Their Carrier name is an old word, the nearest equivalent of which would be "star island."

⁴ In Carrier legends, hunters are very generally supposed to return before night, unless they meet with some accident.

⁵ There are no such baskets among the Carriers, but they are very common among the Tsiŋjoh'tin, the southern neighbours of the sub-tribe to which my narrator belongs.

⁶ *U'kwe-yəŋqəsh oŋlè*. The morning star.

was thus translated up to the sky, and she it is whom we see every morning under the shape of a big star. Her basket full of burning coals explains how it is that the star is so bright.

COMMENTS.

I think that it requires but little acumen to perceive the difference which exists between the present and the preceding stories. The purely mythic character of the one is as clear as the legendary complexion of the others. This remark applies more especially to the second part of the latter narrative, which is altogether mythic or fabulous, while the episode of the procreation of the hybrid brothers and sister might perhaps be regarded as figurative of the mixed origin of the Déné stock. Unless we choose to see in the representative of the canine gens and its nocturnal visits to the maiden a counterpart of the Incubus, the male demon who was formerly believed to consort with women in their sleep. But the first hypothesis is much more probable and natural. Taken as a whole and compared with the other American, and some Asiatic, races, the Déné nation is of a relatively moral disposition, and the monstrous union of the virgin with the old dog might be taken as symbolical of the former intermarriages between the original ancestors of the Déné, whoever they may have been, and some immoral and dissolute race either in Asia or on the coast of America.

Indeed, a particular Déné tribe, that of the Dog-Ribs¹, owes its distinctive name to a similar traditional intercourse of a dog with a woman, and the members of that tribe believe themselves to be the offspring of that union. Shorn of a few repetitions and unimportant monologues, their story is as follows:—

A woman belonging to the tribe of the Yellow-Knives² was living with her brothers when a beautiful stranger came from an unknown land, whom she was made to marry, as so far she had persisted in remaining single. As she awoke during the night she was surprised not to find her husband by her side, but instead she heard a dog gnawing some bones left on the hearth. As she had no dog, she was puzzled and was curious to ascertain whence the canine had come. Fire was rekindled, but no dog was seen. After some more rest, she again awoke to hear the same gnawing in the dark, when one of her brothers threw his axe in the direction of the noise. There was a great outcry, and after the fire had been kindled again, a big black dog was seen lying lifeless, whereby she

¹ An Eastern Déné tribe whose habitat lies between Great Slave Lake and Great Bear Lake.

² Habitat east of Lake Athapaska.

and her brothers knew that the animal was nobody else than her husband who, man by the daytime, became dog during the night.

For her relations with the brute, the woman was abandoned, and in due course of time she bore six little dogs, which she kept in a satchel. One day that she came back from a visit to her rabbit-snares, she noticed foot-prints as of children on the hearth. Desirous of learning whence they proceeded, she attached a long cord to the lacing-string of the sack containing her little ones and, telling them that she was going again to visit her snares she left, but merely went to hide herself a short distance off behind a bush. The little dogs believing themselves alone and unseen, came out of their sack, when their mother pulled the cord, thereby closing it against three, two males and one female, who had come out transformed into boys and girl respectively. Those that remained dogs she abandoned, while the two boys became powerful hunters and, marrying their sister, were the ancestors of the Dog-Rib tribe.¹

Here ends in the original text of Petitot what that branch of the Déné family regards as its national legend. One particular of some sociological importance we seem justified in inferring from the above, viz.: that polyandry did not seem repulsive to the social notions of the Dog-Ribs, any more than their congeners, the Tsé'kéhne, deemed it, until a recent date, inconsistent with propriety. That the former tribe is too exclusive in its appropriation of the tale is shown by the fact that the Tsiḵoh'tin possess a tradition substantially the same as that just related, and all the main details of which are identical with those of the Carrier story. Among the Tsiḵoh'tin, the lodge is simply replaced by the *tiizyan* or subterranean hut, while the bear-berries of the Carrier myth are with them a species of tuberculous root, of which they are particularly fond.

The Hare Indians, another Déné tribe², share with the Kutchin, the northernmost division of that exclusive family, the belief in a tradition according to which "they formerly dwelt very far away in the west and beyond the sea, in the midst of a very powerful nation among which magicians used to transform themselves into dogs or wolves during the night, while they became men again during the day. These people had taken wives from among the Déné³." The Kutchin describe that nation as very immoral and going almost naked. According to Petitot, the same Indians believe also in the existence, on the Asiatic continent, of a nation of dog-men, the upper part of whose body they state to be that of

¹ *Traditions indiennes du Canada Nord-Ouest, par l'Abbé E. Petitot*, p. 301.

² Habitat : Mackenzie, Anderson and MacFarlane Rivers.

³ *Essai sur l'origine des Déné-Dindjé* ; Paris, 1876, p. xxviii.

a man, while the lower part is that of a dog.¹ Their name for these monsters is Tlin-akeni, which means at the same time Dog-feet and Dog-race (*fil de chien*).

To return to our legend. It would seem as if its first part were a sort of national tradition among the hyperborean races of America, since even the Eskimo have a story which is evidently the equivalent of it. According to Dr. F. Boas, an old Eskimo was living alone with his daughter who, for a long time, would not marry. At length a dog, spotted white and red, won her affection and became her husband. By him she had ten children, five of whom were dogs and five were Adlet, a tribe of fabulous beings half-men, half-dogs. The former became the ancestors of the Europeans, while the latter were the progenitors of a numerous people².

As to the second part of our myth, namely, the beautiful story of the initiation of the three brothers into the mysteries of the hunt, and their final transformation into stars, it is, as far as I know, found among no other Déné tribe, except the Tsiṣoh'tin. But the Central Eskimo have a legend which, though strongly impregnated with local colouring, bears a close resemblance thereto. Here it is, after Dr. Boas :—

“Three men went bear hunting with a sledge and took a young boy with them. When they approached the edge of the floe, they saw a bear and went in pursuit. Though the dogs ran fast they could not get nearer, and all of a sudden they observed that the bear was lifted up and their sledge followed. At this moment the boy lost one of his mittens and in the attempt to pick it up fell from the sledge. Then he saw the men ascending higher and higher, finally being transformed into stars. The bear became the star Nanuqjung (Betelgeux); the pursuers, Udleqjun (Orion's belt), and the sledge, Kamutiqjung (Orion's sword). The men continue the pursuit up to this day; the boy, however, returned to the village and told how the men were lost.”³

It is but natural to see savages believe in the personal nature of the heavenly bodies, when even Plato, the great philosopher, thought that the stars were as many animated beings. All the mythologies are unanimous in personifying, each according to the particular bias and the favourite avocation of the people, the constellations and principal stars of the firmament. Hence, the Pleiades, which are among the sedentary people

¹ *Ibid*, p. xxix.

² The Central Eskimo, by Dr. F. Boas, Sixth Ann. Rep. Bur. Ethnol.; Washington, 1888, p. 637.

³ *Ibid*, p. 637.

of Europe the "Hen and Her Chickens," and were among the poetic inhabitants of Greece the seven daughters of Atlas, become a herd of caribou among the native hunters of North America. It is perhaps worth noticing, in this connection, that the Greeks believed also that the Pleiades were being pursued by Orion, the gigantic hunter who, after his death at the hands of his fair but jealous companion, Artemis, was placed among the stars together with his hound.

THE FLUCTUATIONS OF LAKE ONTARIO.

BY KIVAS TULLY, C. E.

[Read February 10, 1894.]

On the 22nd of March, 1879, I read a paper on this subject before the Institute; the fluctuations were from the year 1854 to 1878 inclusive, a period of 25 years. I now propose to extend the observations to the end of 1893, an additional period of 15 years, making a total of 40 years.

The great lakes of North America are the reservoirs of the water shed which lie between 76° and 92° west longitude, and 42° and 50° north latitude, running in a diagonal or north-westerly direction, between the above parallels of longitude and latitude. Since 1878 the survey of the great lakes has been completed by the United States army engineers, and I am enabled to give more correct information with respect to the water surface and water shed of the lakes, than could have been furnished when I read the first paper.

LAKES.	Area of Water Surface. Square Miles.	Area of Water Shed. Square Miles.	Aggregate Area of Basin. Square Miles.
Lake Superior.....	31,200	51,600	82,800
St. Mary's River.....	150	800	950
Lake Michigan.....	22,450	37,700	60,150
Lake Huron and Georgian Bay.....	23,800	31,700	55,500
St. Clair River.....	25	3,800	3,825
Lake St. Clair.....	410	3,400	3,810
Detroit River.....	25	1,200	1,225
Lake Erie.....	9,960	22,700	32,660
Niagara River.....	15	300	315
Lake Ontario.....	7,240	21,600	28,840
	95,275	174,800	270,075

The levels of the mean surfaces of the lakes above the mean sea level at Governor's Island, New York, are as follows:—Lake Ontario 246 $\frac{9}{10}$ feet, Lake Erie 572 $\frac{9}{10}$ feet, lakes Huron and Michigan 581 $\frac{3}{10}$ feet, Lake

Superior $601\frac{8}{10}$ feet. The difference of $20\frac{1}{2}$ feet between lakes Superior and Huron, occurs in the rapids of St. Mary's River; the $8\frac{4}{10}$ feet between lakes Huron and Erie, mainly in the Detroit River. The difference of 326 feet between lakes Erie and Ontario occurs in the vicinity of Niagara Falls, and is principally grouped as follows:—100 feet in the five miles of rapids between Lewiston and the lower suspension bridge, 10 feet in the rapids between the bridge and the Falls, 160 feet at the Falls, 50 feet in the rapids immediately above the Falls, and six feet in the Upper Niagara River.

The mean depth of Lake Superior is about 475 feet, the deepest point marks a depth of 1008 feet, or 406 feet below the level of the sea. Lake Huron has a mean depth of about 250 feet, and a maximum depth of 750 feet. Lake Michigan has a mean depth of 325 feet, and a maximum depth of 870 feet. Lake Erie is comparatively shallow, having an average depth of less than 70 feet, and a maximum depth of 210 feet. Lake Ontario has a mean depth of about 300 feet, and a maximum of 738, or nearly 500 feet below sea level. The channels of the rivers connecting the lakes seldom exceed 50 feet. According to the U. S. lake surveys, the mean annual rain and melted snowfalls of the several lake basins are as follows:—Lake Superior, 29 inches; Lake Huron, 30 inches; Lake Michigan, 32 inches; lakes Erie and Ontario, 34 inches. This is about equal to 31 inches on the entire lake basin. The following represent the average discharges at the outlets of the lakes:—

Lake Superior at St. Mary's River,	86,000	cubic feet per second.
Lakes Michigan and Huron at St. Clair River,	225,000	“ “
Lake Erie at Niagara,	265,000	“ “
Lake Ontario at St. Lawrence River,	300,000	“ “

“It is well understood that the principal factors on which the stage of water in the great lakes depends, are the rain and snowfalls, the evaporation, and winter temperature; the rain and snowfalls furnish the supply, the evaporation withdraws a part before it reaches the mouths of the streams, and form the surfaces of the lakes; a severe and continued cold winter preventing the melting of the snow, will raise the summer stage at the expense of the winter stage. The region of the great lakes is so vast that the conditions of rainfall, evaporation and temperature may vary widely in different sections.”

The following is a detailed statement of the rain and snowfall from 1854 to 1893, and the highest and lowest water on Lake Ontario:

	Inches.	Highest Water.	Lowest Water.	Remarks.
1854—Rain and snowfall—	32.815	June 21, 36½"	Dec. 29, 6"	Great fall
1855	41.550	Aug. 7, 29¾	April 2, 1	Water rising
1856	27.055	June 11, 32½	Dec. 15, 4½	" falling
1857	40.585	July 27, 43½	Jan. 30, 1½	Great rise
1858	32.591	" 13, 44	Nov. 30, 17½	Water steady
1859	39.764	May 31, 43	" 14, 12½	Great fall
1860	27.994	July 8, 24½	" 24, 11	Rise and fall equa
1861	34.475	June 5, 39	Jan. 30, 9	Great rise
1862	34.009	May 21, 43½	Dec. 19, 8	Great fall
1863	32.773	" 16, 34½	" 15, 8	Rise and fall equal
1864	36.946	June 5, 35½	Feb. 16, 4	Great rise
1865	32.929	May 19, 30	Dec. 27, zero	Great fall
1866	39.419	June 18, 20	Feb. 15, - 7	Water kept even
1867	30.091	" 17, 38	Dec. 26, - 5	Great fall
1868	34.278	July 1, 17	Feb. 6, - 12	Low water
1869	39.642	" 28, 27	" 5, - 2	Water rising
1870	46.188	May 6, 47	Dec. 29, 12	Highest water
1871	32.731	" 4, 26	" 29, - 6½	Great fall
1872	25.338	June 22, 3¼	Mar. 19, - 16¼	Lowest water
1873	31.612	May 26, 23	Jan. 9, - 15	Great rise
1874	24.344	June 11, 29	Dec. 30, - 5	Fall at end of year
1875	29.730	" 24, 12	Feb. 17, - 15	Very steady
1876	32.403	July 5, 41	Jan. 10, - 2	Great rise
1877	25.615	April 28, 18½	Nov. 18, - 1½	Low water
1878	48.490	Dec. 14, 25	Jan. 5, - 1	High water
1879	29.365	Jan. 1, 22	Oct. 30, - 6½	Gradual fall
1880	35.322	June 4, 19	Dec. 30, - 7	Rise and fall equal
1881	26.898	July 8, 15	" 7, - 7	"
1882	24.838	June 30, 29½	Jan. 3, - 3	"
1883	34.134	July 16, 36	" 21, - 2	"
1884	28.552	May 22, 40	Nov. 24, 9	High water
1885	32.911	Aug. 3, 34	Mar. 10, 4	"
1886	35.076	May 10, 46	Nov. 15, 14½	"
1887	25.759	" 30, 39	Dec. 29, 3	Low water
1888	26.279	June 28, 17½	" 21, zero	"
1889	31.225	July 3, 22	Nov. 4, - 1	"
1890	37.370	June 21, 37	Jan. 8, 8	High water
1891	31.515	May 2, 29	Dec. 16, - 13½	Very low.
1892	29.505	July 24, 14½	Mar. 7, - 13½	"
1893	39.715	June 1, 27	Feb. 7, - 9	"

NOTE—Where the sign - (minus) is used it indicates level below zero. Zero was established in 1854, being 9 feet above the surface of the rock at the Queen's Wharf.

The observations as to the level of the water in Lake Ontario were commenced by the directions of Capt. Richardson, Harbour Master, in 1854, though a regular float gauge was not constructed until 1856, and since that time the gauge has been four times shifted, care having been taken to preserve the datum. I can personally vouch for the correctness of the observations, having occasion to refer to them constantly as Harbour Engineer since 1853, a period of over forty years.

In the paper which I read at the Institute in 1879, it was stated that the average rain and melted snowfalls for 25 years were 34.172 inches, the highest being 48.490 inches in 1878, and the lowest 24.344 inches in 1874. The average rain and snowfalls for 15 years, from 1878 to 1893, were 31.217 inches, the highest being 39.715 inches in 1893, and the lowest was 24.838 inches in 1882. The extreme fluctuations of Lake Ontario between the years 1855 and 1878 inclusive, were in 1870, when the highest water was reached on the 6th of May, 47 inches, and two years afterwards the lowest water occurred on the 19th of March, 1872, 16 $\frac{1}{4}$ inches, an extreme of 63 $\frac{1}{4}$ inches. The extreme fluctuations between the years 1878 and 1893 were in 1886, when the highest water was reached on the 10th of May, 46 inches, and in 1892, not quite six years afterwards, the lowest water occurred on the 7th of March, 13 $\frac{1}{2}$ inches, an extreme of 59 $\frac{1}{2}$ inches, nearly four inches less than the extreme fluctuations for the previous 25 years. The mean average for the 25 years was 18.20 inches, and for the 15 years, between 1878 and 1893, was 15.17 inches. The diminution of nearly three inches in the rain and snowfalls, and more than three inches in the fluctuations of the above periods, induced me to examine the average rain and snowfalls, as recorded by the Meteorological Observatory, and I find that the above observations have been substantiated, as follows :—

In 1858 the average of 17 years was 36.940 inches.					
1868	"	27	"	36.273	"
1878	"	37	"	35.464	"
1888	"	47	"	34.632	"
1893	"	50	"	34.338	"

Showing a gradual diminution of 2.602 inches in 50 years.

The cause of this diminution is not far to seek. The reckless destruction of the forests in Ontario, also Michigan and Wisconsin in the United States, by lumbering and consequent fires, in the area of the water shed of the great lakes, without a partial or corresponding substitution of trees by planting, is a sufficient explanation of the result, apart from other probable causes.

• The Ontario Government took the initiative, some years since, in es-

tablishing a forestry branch, in connection with the Crown Lands Department, to induce farmers to plant trees, partly to replace the wholesale destruction of the forests, which has been continued for over a century, and the annual reports indicate that some progress has been made in this most important and urgent matter, affecting as it does the prosperity and welfare of the province.

The establishment of the Algonquin Park by the Ontario Government last year, the Banff Park by the Dominion Government, and the Adirondack and Yellowstone Parks in the United States, are indications of the interest that is now taken in this matter by the Ontario, Dominion, and United States Governments. I am not aware that the United States Government has taken any steps to second the efforts of the Ontario Government to rectify the evil effects of the destruction of the forests, by means of planting, etc. It would be interesting to know what the average rain and snowfalls were in the beginning of the present century as compared with the present average; the records would probably show a difference of six inches.

The diminution of the average mean water level of Lake Ontario, three inches in 15 years, affects the shipping interests, as there is so much less depth of water in the harbours round the lake, a constant source of complaint. The chart prepared by Mr. Crosman, of Milwaukee, shows the fluctuations of the great lakes from 1859 to 1887. The chart showing the records of the rise and fall of Lake Ontario is copied from the original in the Harbour Commissioner's office, Toronto; also the annual and weekly records from 1854 to 1893.

The records of extraordinary fluctuations are limited to four instances, though several have been noticed, two of which were observed at Oswego in 1872 and 1873, by officers in charge of the United States survey of the lakes, and two at the Queen's wharf, Toronto, one on the 24th of April, 1878, and one on the 17th of April, 1880. The records are as follows:—"On the 13th of June, 1872, at Oswego, between 2 and 3 p.m., the water suddenly rose one foot in ten minutes, and afterwards continued to rise and fall until 7 o'clock, the barometer falling nearly all the time. At ten minutes past 3 a white squall and water spout passed about one and a half miles to the north-west and moving west. At Olcott, 112 miles west of Oswego, the people reported having seen an immense sea serpent lashing the waves, which was presumed to be the water spout before noted." Again at Oswego on the 19th of July, 1873, it was observed:—"At 3 o'clock the barometer had fallen .05, the water to $2\frac{4}{10}$ feet, and the thermometer was 76° ; at 5 p.m. the water suddenly rose to $3\frac{4}{10}$, it was found that the barometer had fallen .07, the wind had

shifted to the south-west, and the thermometer had risen to 80° . At five minutes past 5 the water had fallen again to $2\frac{4}{10}$, the wind shifted to the north, blowing fresh, and a water spout appeared about four miles N.N.W., moving S.S.W." General Comstock remarked in reference to these reports:—"It would seem, then, from the consideration of the irregular fluctuations at Milwaukee, Marquette and Oswego, that a probable cause is to be found in the oscillations of the barometer, either local or general, and in the accompanying winds, periodically arising in some cases by reflection from the opposite shores,"

The unusual fluctuations at the Queen's wharf, Toronto, in 1878 and 1880, are noted as follows:—Capt. Paul, in charge of the Dominion Government dredging, stated in his diary, April 24th, 1878: "A.M., cloudy, threatening, wind fresh, east; P.M., heavy squall from the S.E. with rain. Extra rise and fall of water $3\frac{1}{2}$ feet above the average. Normal state of water 20 inches above zero. On the 23rd the level was 19, and 25th, 20 inches above zero." The time was not stated, but he informed me shortly after the occurrence that it was in the afternoon. Mr. Carmael, now superintendent of the Meteorological Observatory, kindly furnished me with the barometric readings for that day. "Between 1.58 p.m. and 2.02 p.m. there was a sudden rise of more than a tenth of an inch, viz.: from 29.122 to 29.226, in less than four minutes." Mr. Carmael, who lectured at the Institute shortly after that time, mentions in his notes on the above: "At about 2 h. 2 m. the wind suddenly increased in force and veered from east to south, afterwards returning to S.E. and E., the force at the same time diminishing." There were no reports of water spouts or sea serpents. In reference to the second fluctuation, the *Toronto Globe*, April 19th, 1880, stated: "About 5.45 p.m. on Friday last (17th inst.), a tidal wave set into the harbour, when the water suddenly with one great advancing flood raised about twenty inches. The height of water was maintained, ebbing and flowing for about an hour. The wave appeared to come in from the south, where the sky at the time gave the appearance of a heavy squall." With reference to the supposed tidal theory, General Comstock remarks: "The known existence of a lake breeze at Milwaukee during the summer months, at once suggested itself as a cause for this inequality, and on comparing the solar diurnal curves for April and November, when the lake breeze should be weak. and that for July and August, when the lake breeze should be the strongest, with that of the whole season, it was found that for the former months the inequality nearly disappears, while for the latter it is considerably increased, thus justifying the supposition that the lake breeze is the cause of the inequality." On such evidence the so-called tidal

theory may be dismissed, so far as regards the apparent effects on lake fluctuations.

The extreme fluctuations of Lake Erie, or the difference between the records of the highest and lowest water at Port Colborne, between 1859 and 1867, were 11 feet 3 inches, and the extreme fluctuations of Lake, Ontario, at Port Dalhousie between 1868 and 1870, were 6 feet 11 inches, and according to the records in the Harbour Commissioner's office, Toronto, between 1870 and 1872, were 5 feet $3\frac{1}{4}$ inches, as before explained in reference to the fluctuations of Lake Ontario. Extreme fluctuations on lakes Superior, Michigan, Erie and Ontario have been referred to by newspapers and periodicals in the United States and Canada, but as the fluctuations were not particularly recorded, or accurately substantiated by reliable observations, as in the above-mentioned instances at Oswego and Toronto, I have not considered it advisable to give an account of them in this paper.

THE GESTURE-LANGUAGE OF THE BLACKFEET.

BY REV. JOHN MACLEAN, PH.D.

[Read 3rd March, 1894.]

The gesture-language of the Blood Indians is the same as that belonging to the Piegan and Blackfoot Indians, the whole comprising the Confederacy. My first observations among the tribes of the Canadian North-West induced me to conclude that the gesture-language was similar amongst all the tribes, but later studies among the Crees, Stonies and Sioux have compelled me to change my opinion. I found during visits made to the camps of these people that I could talk with them about time-measurements, and was able to count by signs, but I was unable to converse with them of matters relating to daily life. Distinct from the gesture-language proper, there exist several methods of communication, as by the arrangement of fires on the prairies in times of war or when travelling, the various modes of the curling smoke being used to convey different messages, and piles of stones on the prairie marking distances or indicating some notable event. The Indians' system of telegraphy includes different modes of riding on horseback, motions of blankets and the use of looking-glasses.

The gesture-language is spoken in general by means of the hands. The gestures representing the various tribes are as follows :

Blood Indians.—The forefinger and second finger of the right hand are brought together and held open, while the hand is closed. These are pushed forward under the lower lip, horizontally across the chin.

Piegan Indians.—The right hand closed, and placed against the right cheek at the top of the cheek bone, with closed thumb touching the cheek. The fist is made to rotate rapidly and outward upon the cheek.

Blackfoot Indians.—The two forefingers of the right hand erect and apart in the shape of a V and the rest of the hand closed. Holding the body erect, the fingers are pushed downward and outward over the right foot, as if in the act of scooping mud off the foot.

White Men.—The forefinger of the right hand drawn horizontally across the forehead, in the centre of the brow.

Sioux Indians.—The forefinger of the right hand drawn across the throat, as if in the act of cutting the throat.

Sarcee Indians.—The forefinger and thumb brought together at the tips, then raised to the right hand corner of the mouth, and made to operate as a person would do in taking a pinch of some fine powder and then rubbing it between the fingers.

Crow Indians.—Both hands raised by the sides palms downward, and raised up and down several times to represent the flapping of a bird's wings.

Gros Ventres.—*Fall or Willow Indians*, known amongst the Blackfeet as the *Atsinas*.

The tips of the fingers brought together below the chest, palms of the hands open and toward the body, then pushed outward and downward to represent corpulency.

These gestures do not always correspond with the name of the tribe, but in general describe some characteristic of the people.

In the modes of reckoning time, the measurements are made by the right hand. The forefinger of the right hand is bent, and held toward the sun, to mark where it stood at the time indicated. Thus the hand with the finger bent begins at sunrise and goes round marking each distinct position, and the hour of the day is measured in this manner. These Indians, like many other tribes, use the term "nights" where the white people use "days".

In counting, both hands are used. The forefinger of the right hand is brought into contact with each finger of the left hand separately in counting units.

Tens are counted by holding up the hands and opening and closing them as often as *tens* are in the number. Another method is to run the forefinger of the right hand horizontally across the fingers of the left hand. Thus to reckon fifty, both hands may be opened and closed five times, or the right forefinger drawn across the thumb and fingers of the left hand in the manner indicated.

In describing a hunt one set of gestures is used, applicable especially to this kind of life.

Buffalo are represented by lifting the hands to the side of the head and raising the forefinger of each hand to indicate horns.

Shooting is indicated by bringing the palms of the hands together, the right hand being uppermost, and quickly striking the centre of the palms, at the same time making a noise with the mouth as if a number of rifles were being fired in succession.

Looking through a telescope is expressed by holding the hands to the eye, finger and thumb of each hand brought together at the tips, forming a circle, the right hand being nearest the eye, and then looking through them.

An animal being shot and falling to the ground is shown by holding the palms of both hands toward the ground, and throwing them down a few inches.

Scalping.—The left hand holding an imaginary scalp-lock, and the right hand performing the act.

War-cry.—The right hand held over the mouth, striking it quickly in succession, at the same time uttering a most unearthly cry, which is never forgotten by those who have ever heard it.

Surprise.—The palm of the right hand held over the mouth, while the eyes express astonishment. Sham fights are engaged in during the Sun-Dance, in which many of these gestures are used. There are a large number of miscellaneous gestures, some of which can be explained in words, but others cannot be accurately described except by actual representation with the hands.

Nistoa = I.—Is represented by placing the forefinger of the right hand upon the nose, having the hand closed and turned toward the face.

Moyis = A lodge.—The hands held upward as if in the attitude of prayer, palms toward each other, and tips of fingers touching one another.

Aiksoo = It is finished.—The end of any work or contract, or the dissolution of a bargain, as much as to say, "there's an end of it." The hands are closed, and held in front of the body, then brought together until the thumbs touch each other, afterward separating them quickly, resembling the motion of a shoemaker in sewing.

Mis-amot = A long time ago.—The left arm held out from the body, and the forefinger of the right hand pointing toward the left arm, drawn up the left hand toward the shoulder.

Saiapetsio = He is speaking falsely.—The right hand held toward the face with palm inward and open, the fingers pointing upward, and then a quick motion from left to right as if trying to cut off the nose. Another form of this expression is to bring the two forefingers of the left hand to the mouth, separated in the shape of a V, and pointing outward to represent a forked or doubled-tongued person. A deceitful person is represented by the right hand being held in front of the body palm open and downward, and the hand tipped first to one side and then to the

other, as if the heart were swaying and was undecided, and therefore not to be depended upon.

Aipoyeo = *He is speaking*.—The right hand palm upward brought toward the mouth with the fingers pointed outward, until the edge of the hand touches the lower lip, then carried forward from the mouth in a trembling manner, as if carrying the words separately and throwing them out after each other.

Pistceksena = *A snake*.—The forefingers of the right hand held horizontally and pushed outward with a zig-zag motion made resembling the motion of a snake in crawling.

Awaseneo = *He is weeping*.—The forefingers of both hands held toward the eyes and drawn downward several times, representing tears coursing down the cheeks.

Friendship is expressed by joining the hands together and shaking them, as a person does in shaking hands with another person. This appears to have been learned from the white people.

Kitâkomimo = *I love you*.—First the sign for *Nîstoa* is used, then both hands are pressed against the left side in token of endearment, and finally the forefinger of the right hand is pointed toward the person loved.

Kika = *Wait*.—Desiring a person riding on the prairie to wait, the Indian holds his right hand open above his head, and then with the fingers pointing upward, the hand is shaken backward and forward while the arm is held firmly in position.

Nîtûqpuma = *I am trading*.—The left arm bent, hands shut and bent toward the body, the forefingers of both hands extended, the forefinger of right hand placed on top of the left forefinger in the form of a cross.

Nomûqpûpe = *My blood-relation*.—The points of the fingers of the right hand brought together, the tips touching the breast, and then drawn out, representing the act of nursing.

Nîtaikimatapsi = *I am poor*.—The left hand closed, forefinger extended and held toward the body, the right hand closed with forefinger extended and placed upon the left finger, and finally a quick motion repeated by the right forefinger upon the left forefinger toward the finger as one does in sharpening a pencil.

Noqkokit = *Give it to me*.—The right hand open, palm toward the body, and a motion made as if drawing goods toward the person.

Aoûqseneo = *He is eating*.—Both hands held half open toward the

body, and a quick motion made representing the act of throwing articles into the mouth.

Nimataioqtciqp = *I do not hear it, I do not understand it.*—The forefinger of either hand bent, and held toward the ear on the same side as the hand, and then the finger jerked toward the centre of the ear. Another mode of expressing the same idea is to hold the palm of the hand toward the ear with the fingers half bent, and then to throw outward the whole hand.

Being born, or the time of our birth is represented by the left hand being held palm downward, thumb toward the body, below the chest and close to the person, the right hand palm downward, fingers pointing outward from the body, and the whole right hand pushed under the left hand and outward from the person.

Anom = *Here, this place.*—The end of the closed fist of the right hand placed on the end of the closed fist of the left hand.

Riding horseback, is indicated by the first and second finger of the right hand being separated and placed over the forefinger of the left hand in a straddled fashion, the palm of the left hand being toward the person.

A friend of mine distant from me a mile I was anxious to converse with, but he was beyond the sound of my voice and was rapidly walking away from me. An Indian was coming toward him on foot, and seeing my opportunity I called to one of my Indian friends near me and told him to inform the Indian in the distance by means of the gesture-language that I wished to talk with the white man. Immediately he used the sign for *kika* = *wait*, pointed toward the white man, brought his right hand down and toward his person in a swaying motion, then closed the same hand, raised it and brought it toward the ground in a perpendicular manner. The Indian in the distance walked up to the white man, and delivered the message, who turned and came to the place where I awaited him.

The gesture-language is full of expressive signs, a few of which I have given, but a small volume could be written on this interesting subject.

THE CLIMATE OF ALBERTA.

BY R. F. STUPART.

[*Read 7th April, 1894.*]

Not long since, in looking over some meteorological observations made at Edmonton, N. W. T., it struck me it would not be amiss to write a short paper on the climate of Alberta, which portion of the Dominion has, I conceive, a climate more than fairly desirable as regards mere living in it, and I trust also one that will make the country widely known for its rich farming and pasture lands; on the latter point, however, I am no expert, and am unable to speak authoritatively.

From mere hearsay and newspaper reports one may well be somewhat puzzled as to the facts concerning the climate of our great Northwest. We hear people talk of a country where 20° below zero does not feel cold, and of a country further west where lawn tennis is an amusement sometimes indulged in at Christmas, and again of howling blizzards and Arctic cold.

Meteorological observations taken at various points in the Territories during periods ranging from nine to twenty years, afford sufficient data to report with a fair degree of accuracy on the climatic vicissitudes which may be experienced, such series containing, as they probably do, seasons of extremes in both directions, one or more of which will at any rate approach the greatest ever experienced in the country.

In considering the climate of Alberta, nine years observations at Calgary and eleven at Edmonton have been closely studied and analyzed, but beyond the more detailed investigation of the climatic changes occurring from month to month, and in various years, I shall endeavour to shew how it is that this particular part of the Dominion is subject in winter to very great temperature changes in a short time, bitter cold giving place in a few hours to balmy weather under the softening influence of the chinook. A valuable and instructive paper published in the "American Meteorological Journal" for August, 1888, by Mr. C. C. McCaul, of Calgary, N. W. T., points out very clearly the wonderful effect so often produced by a change of wind from north and northeast to southwest and west, how the temperature will in a few hours jump up from 20° below zero to 40° above and a thick covering of snow rapidly disappear, and also deals very correctly with some of the conditions that produce these balmy westerly breezes in winter.

In glancing over the mean temperatures of the various winter months—December, January and February—at Calgary and Edmonton, the first thing that must strike one is the very large difference between the highest and lowest means of corresponding months in different years; for example, in 1891 the January average at Edmonton was 20.9° , and Calgary 27.0° , which former temperature is approximately equal to the Toronto normal, and the latter several degrees above, while in 1890 Edmonton shewed a monthly average of 6.8° below zero, and Calgary 3.5° below, both of which are not far from the mean at Moose Factory on James's Bay. At Edmonton, January 1886 was even colder than 1890, shewing an average of 13.7° below zero. A normal deduced from the eleven years' observations at Edmonton gives 2.7° , and the nine years' observations at Calgary give 9.4° for that station.

February means shew the same tendency to extremes. In 1889 the February mean temperature was 21.9° at Edmonton and 20.3° at Calgary, while in 1887 it was 10.4° below zero at the former station, and 4.0° below at the latter. The February normal at Edmonton is 5.4° , and at Calgary 12.0° . The December means do not shew quite so wide a range, but December 1890 shews a mean of 22.6° at Edmonton, and 25.4° at Calgary, while in 1884 it was 1.0° at Edmonton, and 3.5° at Calgary.

While at both stations the winter months are in some years excessively cold, scarcely a month goes by without one or perhaps several breaks when the temperature exceeds 40° , and at times in some months is upwards of 50° . The highest temperature registered at Calgary in January was 58° on the 23rd, 1892, and at Edmonton 52° on the 22nd, 1892.

At Edmonton, on the average out of the 59 days in January and February the temperature exceeds 32° on 17 days, and at Calgary on 23 days. On the other hand, at neither station has there been a January in which the temperature has not fallen to 20° below zero, and 57° below has been recorded at Edmonton and 48° below at Calgary.

March shews a very marked improvement in the temperature, the normal for Calgary being 26.8° , with an average maximum of 39.2° , and at Edmonton 23.7° , with an average maximum of 35.3° . The lowest March temperature recorded at Calgary was 28.7° below on the 2nd, 1888, and at Edmonton 39.5° below on 3rd in the same year.

April shews a normal of 39.3° at Calgary, with an average maximum of 52.5° , and Edmonton shews the same temperature with an average maximum of 51.5° . Scarcely a year goes by without temperatures exceeding 70° being recorded.

A comparison of these average temperatures, etc., with those of other parts of the Dominion shews that with the exception of South and Southwestern Ontario and British Columbia there is no portion of the country where the spring opens as early as in Alberta.

The mean temperature of Northeastern Ontario, deduced from observations at Lindsay, Ottawa and Rockliffe, gives a March mean of 20.7° , with a mean maximum of 31.1° , and an April mean of 38.2° , with a mean maximum of 49.0° , shewing that during both these months the weather is colder in Northeastern Ontario than in Alberta.

From May to November the temperature is lower in Alberta than in any of the more settled parts of Ontario. The warmest month is July, with a mean of 60.5° at Calgary and 58.8° at Edmonton, and a mean maximum of 74.0° and 72.9° respectively.

In some years frosts occur in early June, but by no means invariably. There is no instance recorded of the temperature at either station touching the freezing point in July. In August there are a few instances of frost, but it is uncommon.

Usually it is well on in November before the temperature falls to zero roughly speaking between the 15th and 20th.

The month of December shews much the same figures as those of Northeastern Ontario, the mean at Calgary being 17.2° , with a mean maximum of 27.4° against 17.7° in Northeastern Ontario, with a mean maximum of 25.8° . The advantage is thus with Alberta.

The total mean annual precipitation is 14.16 inches at Edmonton and 12.85 at Calgary; of this the greater portion falls as rain between April, and September, the amount being 9.81 inches at Calgary and 10.61 inches at Edmonton, or about 67% of the amount which falls in the Northeastern Ontario district during that period.

In Alberta there is a great deal of sunshine, the annual amount of cloudiness being only about 70% of the average amount at Toronto; roughly speaking the average cloudiness during the fall and winter months is 72% and about 50% in summer, but in Alberta summer and winter months shew about the same amount, and give a yearly average of 43%.

THE CHINOOK.

During the winter months the normal atmospheric pressure conditions are anticyclonic over the interior of the continent, while over the northern portions of the Atlantic and Pacific oceans there is tolerably persistent low pressure. This distribution of pressure gives prevailing north-

westerly and westerly winds over Canada from Manitoba to the Gulf of St. Lawrence. Along the eastern slope of the Rocky Mountains they are generally northerly, but as we cross to the Pacific Coast the barometric gradient alters its direction in a way to produce a prevalence of easterly to southerly winds near the British Columbia Coast, and as we go still further west we find in crossing the Pacific south of latitude 50° a prevalence of southwesterly winds blowing from a subtropical belt of high pressure towards the low to the northward.

Now the normal low pressure area over the North Pacific is a region frequently traversed by barometric depressions or storm centres, many of which move to the coast of California or British Columbia and thence force their way into the continent, temporarily displacing the high pressure there prevalent. It is when one of these areas of depression is forcing its way inland over Northern British Columbia that the winter Chinook is felt in Alberta. Then is Alberta within the southwest barometric gradient in connection with the storm centre and southerly to westerly winds are blowing over British Columbia. These winds blowing off the sea are moist, they ascend the mountain slopes and are gradually deprived of their moisture, rain or snow falling on the mountain sides. This condensation of moisture sets free latent heat which retards the dynamic cooling due to diminished pressure, and afterwards as the dry air descends the eastern slopes it is heated by compression at the normal adiabatic rate, and the result is a mild dry wind over the Alberta prairies.

It will easily be understood from this that the character of the seasons in the far West must depend greatly on the track that storm centres take in passing into the continent from the ocean. In some seasons the majority of them pass over Northern British Columbia, and then there is a marked persistence of the mild southwesterly winds in Alberta; in other years the majority pass into the continent further south, perhaps only a few moving north of the latitude of Calgary, then is Alberta favoured with but a small quantity of balmy breezes.

When a storm centre passes over Washington or Oregon States and thence perhaps east or southeast, Alberta and the Territories, in lieu of the mild southwester, experience bitter north and northeast winds and perhaps a snowfall, and at times Vancouver Island itself is subjected to a northerly gale with snow.

ABORIGINAL AMERICAN INSCRIPTIONS IN PHONETIC
CHARACTERS.

BY JOHN CAMPBELL, LL.D., F.R.S.C., &c.

[Read 15th December, 1894.]

The dictum of Schoolcraft, to the effect that our aborigines had never advanced beyond the pictographic stage of writing and were ignorant of phonetic characters, has been generally accepted by those who are regarded as authorities on the subject of American antiquities. That irrational preconception, which facts traverse on every side, has led them to denounce as forgeries documentary evidence on stone, for the production of which no adequate motive has been adduced, and the genuineness of which has been attested by many credible witnesses. Discovered at different periods, by many different persons, and in regions widely separated, from Virginia to Massachusetts, and from Iowa to Nova Scotia, these documents, with variations, are all of one character, and that is intimately related to the syllabary found on many Siberian monuments. I have already in two papers, of which the Siberian alone has yet been published, furnished the Institute with samples of the northern Asiatic and kindred Buddhist Indian inscriptions. A similar task I now propose to perform for those of the North American continent.

Before proceeding with this task, however, I may say that I have already nullified the preconceived contention of Schoolcraft's followers by presenting to the Royal Society of Canada, at its meeting last May, translations of several Central American inscriptions found at Palenque, Copan and Chichen-Itza, inscriptions of a purely ideographic character, whose sole peculiarity is that the phonetic equivalents of the ideographs occasionally possess the equivocal values of the *rebus*. The Central American hieroglyphics are a form of American writing entirely distinct from that of the Mound Builders, and were derived, as Professor Cyrus Thomas at last agrees with me, from the Malay-Polynesian area. The hieroglyphics of Mexico proper, on the other hand, are to the characters of the Mound Builders as the hieroglyphics of the ancient Egyptians were to their hieratic and demotic script.

There are pictured rocks in Siberia and Japan, very similar to those found throughout America, as the latter are portrayed in the late Garrick

Mallery's Picture Writing of the American Indians. These are quite distinct from inscriptions in phonetic characters found in both areas. The authors of the phonetic inscriptions in India and Siberia were Buddhist monks, or those of them who constituted a caste of Scribes. In both countries, and the same is true of Japan, although the inscriptions of that empire yet published are too vague and fragmentary to read, the language of the documents is pure, if somewhat archaic, Japanese, a fact of which I was not aware when, many years ago, I essayed the decipherment of one of the Davenport tablets. In several communications to the Institute, I have shewn that the affiliation of most of our North American aboriginal languages, such as, to use the designations of Pilling, the Siouan, Iroquoian, and Muskogean, are with the Sibero-Japanese or Khitan tongues of Northeastern Asia, in whose area the literary Japanese was the classical form of speech. It was also the classical tongue in aboriginal literary North America; and, even at the present day, the Muskogean group, including the Choctaw, Chickasaw, Creek, and Seminole, furnishes a series of dialects differing as little from the Japanese as English does from German. It is, therefore, no matter for astonishment to find the Japanese of Siberia repeating itself in the records of our Mound Builders. Competent Japanese scholars, such as the Rev. Dr. Jonathan Goble, of Philadelphia, cheerfully admit that my translations of the Siberian inscriptions are idiomatic Japanese, and it is in the power of any intelligent person to test the consistency of my transliteration of the American texts, and to submit the language they yield to the judgment of experts.

A melancholy interest attaches to my task, inasmuch as most of the scholars who kindly furnished me with copies of the inscriptions have passed away out of this life. Such are Dr. Farquharson, of Davenport, Iowa; Colonel Charles Whittlesey, of Cleveland, Ohio; Professor E. N. Horsford, of Cambridge, Mass.; and Sir Daniel Wilson, of Toronto. Of my other benefactor in this respect, Professor Hilder, of St. Louis, Mo., I have not heard for a long time, but trust that he is still among us in body as well as in spirit. It would have been a great gratification to me to have had their matured judgment on my epigraphic researches, which were not sufficiently advanced to allow of my submitting the finished result to their benevolent scrutiny. This paper may have the effect of bringing to light other literary records of the Mound Builders and their descendants, which have been withheld from public gaze in order to save their innocent possessors from the odious charge of forgery, so maliciously and ignorantly brought against the finders of those that have been published.

Of all the inscriptions in Mound-Builder, or, if the term be preferred, in Siberian characters, the simplest and most legible is that on the Inscribed Rock of Yarmouth, Nova Scotia. As it has been known for nearly a century, and its genuineness, so far as I have heard, has never been called in question, it makes a fitting starting point for the epigrapher. It consists of twelve characters, that which is to the left of the V form, fourth from the end, consisting of two obtuse angles, which ought to be close together. The inscription reads from left to right. Its two V characters are *bu* or *fu* syllables; the second character is *bi* or *be*. The third, like a C, is *de*; the fourth and the last are forms of *ka*. The fifth and the last but one are equally *go* or *ku*; the sixth is *ta*, *to*; the seventh is *ra*, *ro*, *ri*, etc., any power of *r*. The eighth double character is a variant of the third, namely, *de*; the ninth, eleventh and twelfth have been already given, and there remains only the tenth, which is *chi*, *shi*. The whole reads:—

NO. I.

bo bi de ka ku ta ra de bu shi go ka

Turned into modern literary Japanese, this is:

Wabi deka Kutarade bushi goki

“Peacefully has gone out Kutarade warrior brave,” or more freely, “The brave warrior Kutarade has died in peace.” Kutarade is not a Japanese name, but, as “Katorats,” it is Huron-Iroquois, and means “the hunter.” The Japanese equivalent is *Karindo*. It would be interesting to find when Katorats lived and died, as indicating the late possession by the Huron-Iroquois of a written character and a sacred language.

The next I submit is an inscription on the Northman's Written Rock, near West Newbury, in Massachusetts. The tracing was made in 1853, and my copy of it came from the late Professor Horsford. In Siberian inscriptions, two more or less parallel lines, not always perpendicular, take the place frequently of the pair of obtuse angles which give *de*. The single straight line, however placed, is an open vowel or aspirate and the Z figure is *na* or *no* in universal Hittite script. The latter is but a square variant of an S, and the sort of crosier that follows it is also an imperfect S with phonetic value *no*. The following *m* can hardly be anything else than *me* or *mi*; then comes a vowel or aspirate, and after it a *shi*. The *w* like character is a double *bu*, *fu*, followed by an open *shi*; if it faced the other way it would be a *de*. The character that looks like a capital R is two characters in reality, that to the left being an *s* syllable, and the compound one on the right being a combination of *s*

and *t*, making *dzu*, *tsu*. After the following *no* comes *fu*; then the vowel or aspirate; then three dots before another *fu*, and two strokes which stand for the number two. In the lower line the club denotes *ta*, *to*; but what follows is without duplicate in Mound-Builder writing. It is neither Siberian nor Buddhist Indian, but in ancient Hittite, in Corean, and in Aztec script, it would be an *l* syllable, which Japanese has not. Next comes an imperfect *shi*, followed by the well-known Indian and Siberian equivalent for a fish, which is *me*, *mi*. To the right of the effigy comes another club, *ta*, *to*, and the common diamond symbol, *ma*, *mo*.

We are now in a position to read the document.

No. II.

de ha na no me ha shi bu shi se tzu no fuye 3 fu 2 to li shi me X to ma.

In Japanese this is:

Dehana no Mehashi bushi setsu no fuye 3 fu (tachi) 2 Torishime atome.

"Dehana of Mehashi warrior seasons of number 3 twenties 2 Torishime heir."

Freely: "Sixty-two (is) the sum of the years of the warrior Mehashi of the Dehana, the heir of Torishime."

Mehashi in Japanese means "the quick"; and Tolishime or Torishime is "the controller." As for the Dehana, I think they are the Tionon or Tionontates, a Huron clan; so that Mehashi, and his predecessor Toli-shime, may have claimed kindred with the Nova Scotian Kuturade. The arithmetical notation is purely Siberian.

It is a long step from Massachusetts to Virginia. The Grave Creek Stone was found in 1838 in the Grave Creek Mound, twelve miles below Wheeling in West Virginia. It has three lines of writing. Beginning at the left of the top line, there appears the *ka* of the Yarmouth Stone, followed by a cross, *ta*, *to*. The third figure is *ku*, *go*; and the fourth, a St. Andrew's cross, is still *to*. Next comes the common *r* syllable, and after it a 4 which is a variant of the fish *me*, *mi*; with another *to* to bring up the rear. In the second line, the St. Andrew's cross is still *to*, *do*; the obtuse angle convex is *de*, *te*; the line is a vowel or aspirate; and the obtuse angle concave is *chi*, *shi*. This is followed by the *bi*, *be* of Yarmouth, and that by a limbed *r* syllable. The next characters are simple numerals, 2 and 3 strung in a line. The third line presents *bu* or *fu*; then a cross with a short line attached. The cross is *ta*, *to*, and the line is the vowel or aspirate. The *r* syllable follows; then comes *mi*, *me*; and the next character is a combination of the vowel sign with a *ts* form.

PLATE I.—THE MOUND BUILDER SYLLABARY.

<i>L Syllables</i>	8 8 8 8 8 8
<i>R</i> ..	∧ ∧ ∧ ∧ ∧
<i>M</i> ..	⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕
<i>N</i> ..	9 9 9 9
<i>BP</i> ..	∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪
<i>Fu</i> ..	∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪
<i>W</i> ..	∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪
<i>S</i> ..	∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪ ∪
<i>D, T</i> ..	{ (< ↑ × + × + ∪ ∥ ∇ ∪ ∪ μ + ρ ≈ ∫ ∫ « † † ⇒ ∥ ∪ ∪ ∪
<i>Tsu</i> ..	↓ ∪
<i>Itsu</i> ..	∪ ∪
<i>Ge, Ki</i> ..	∪ ∪ ∪
<i>Ga, Ku</i> ..	{ ∪
<i>Vowel or Aspirate</i>	∪ ∪ ∪
<i>Buddha Sign</i>	∪

PLATE II.—

No. 1.

V S C Π T T A << V) T H

YARMOUTH STONE, NOVA SCOTIA.

No. 2.

11' Z 9 W W) R S
↑ 目 2 6 . 3 4 5 6 7 8
↓

No. 3.

N + K X A 4 +
X < | > T < A † †
U + A 4 † B †

No. 4

K E X Y F †

No. 5.

① 4
② 3
③ 2
④ 1
⑤ 0
⑥ 9
⑦ 8
⑧ 7
⑨ 6
⑩ 5
⑪ 4
⑫ 3
⑬ 2
⑭ 1
⑮ 0

The D with a stroke through it I have shewn, in the discussion of the Siberian inscriptions, to be an ideograph for Buddha; and the final character is a power of *l*.

Thus the whole may be read as follows:

NO. III.

Ka to go to ra mi to
do te u chi ba te ri 2 3
fu ta ye ri mi itsu Buda li.

Put into shape, it is:

“Katogo Tora mito
 Dote uchi bateri 2, 3
 Fu taye ri miitsu Buda ri.”

In English, literally:

“Katogo, Tora king
 Mound house finished 2, 3.

Twenty to end the *ri* six Buddha period.” And in English idiom: “Katogo, king of Tora, finishes the house of the mound, b 2 to end the sixth *ri* of the period of Buddha.”

Here we have that priceless boon, a dated tablet. The Siberian inscriptions shew the *ri* to have been a period of 300 years. The mound being finished within 62 years of the sixth *ri*, it was 1738 years after Buddha's death, that is, in 1261, A.D., at the time when Kublai Khan and his Mongols were reducing Northern Asia. There is a great deal of aboriginal history contained in this brief inscription from a great mound, and, in my Hittite Track in the East, I have endeavoured to set it forth as embodied in Mexican story, for the Tora of the tablet is doubtless one of the Mexican Tulas.

There are two Ohio inscriptions. The smaller, furnished by Colonel Whittlesey, of Cleveland, is on a nodule of kidney iron ore, surmounting a human effigy. It was found in the bush in Plain Township, Stark County, between eighty and a hundred years ago, and, when last heard of, was in possession of Dr. Pease, of Manitou. The text is exceedingly brief, consisting of six characters, very runic in appearance. With the knowledge obtained from the texts already deciphered, it is easy to see in the third and fourth characters a *to* and a *ku*. The first and fifth, however, are new, and the Siberian documents must instruct us that these F like symbols are variants of *fu*: were their lateral strokes on the

left they would be *ke*, *ki* forms. The second and the last character are conventional forms of the tree, *ku* or *go*. Thus the reading of the six symbols is :

No. IV.

In better order : *fu ku to ku fu ko.*
Fuku Tokufu ko.

“Fuku, the child (son) of Tokufu.”

The names are significant in Japanese, Fuku meaning “the fortunate one,” and Tokufu “the place or law of virtue, power, or profit.” The latter name seems to connect the chiefs with the Attakapas, who, at a later period, occupied parts of Louisiana and Texas.

The other Ohio inscription I received a photograph of from Professor Hilder, of St. Louis, in 1882. The stone on which it is was found in Brush Creek Mound, in Muskingum County. It is unique as an American record, both as regards the form of its characters and the direction of its writing, but has its analogues in Siberia. The document begins at the top of the left hand column. There the first group contains the parallels *te*, *de* combined with the *shi* symbol, and these together constitute the compound *dzu*, *tsu*. Below them is the short line, denoting a vowel or aspirate; and below that again comes a rounded *v* symbol, *fu* or *bu*. The next group contains an evident *te*, *de* in the convex curve, and the enclosed dot may stand for *hi* in *hitotsu*, one, while the lower curve is another *fu*. According to Cypriote and other analogies, the succeeding figure is a power of *l*; and the two dots below are to be read not as numerals, but in rebus style, as *fu* in *futatsu*, two. The three curves beneath must be separated into a *shi* form and the two parallels *te*, together furnishing the compound *tsu*.

The first character on the right is the *mi* of the Grave Creek Stone. Under it is the *ta*, *to* of the Yarmouth Rock, a dot taking the place of a straight line. It is possible that the dot may be the numeral one. The succeeding line with another dot gives one ten, followed by two dots and a *fu* character on its side, furnishing two twenties. After these comes the *itsu* of the Grave Creek Tablet; and the *li* or *ri* of the left hand column is repeated. We are now in a position to read the whole inscription, which runs as follows :

No. V.

tsu i fu te hi fu li fu tsu
mi to (1), 1-10 2-20 itsu li.

In connected order :

Tsuifu-Tehifu Lifutsu
Mito, (1), 1-10, 2-20 itsu ri.

In English :

“Tsuifu-Tehifu Lifutsu
King (1), 1-10, 2-20, 5-300.

Freely :

“Tsuifu-Tehifu, King of Lifutsu,
fifteen hundred and fifty-one.”

The only Khitan era is that of the death of Buddha ; hence 1551 after Buddha places the inscription in 1074 A.D. The Lifutsu were the later Tallapoosas of Alabama and Georgia ; and Tsuifu-Tehifu might be read Tsuifu-Tabi, when its meaning would be “the banished wanderer.” Certainly, the first part of the king's name denotes his banishment, but from whence is a mystery. His time was that of the great upheaval which removed the Toltec dynasty from Mexico to Peru. In 1062, just twelve years before Tsuifu's burial in the Brush Creek Mound, this event took place, so that it is within the bounds of possibility that Mexico was the civilized home from which he was banished.

Most unworthy charges of fraud have been laid at the door of the Davenport Academy of Science in connection with the finding of two phonetically inscribed tablets in mounds near that city in Iowa. These tablets are of precisely the same character as those already deciphered, and as forgeries at the time are a simple impossibility. But ignorance and presumption have no limits. The tablet representing a cremation and scene contains somewhat irregular groups of characters, which for convenience I arrange in four lines. It inverts the usual order, beginning at the right hand upper corner, and returning boustrophedon. But the third line begins at the left, and the fourth at the right. Its characters are roughly executed, partaking to a certain extent of the hieroglyphic form. An *s* syllable in particular, representing the pointing of the hand to the face, is there, although rare in Siberia and in India. It is common, however, in Syrian Hittite and in Mexican hieroglyphic.

The lines read as follows :

NO. VI.

No. 1.—*ri 4 3 fu to ma ka wa la ka . . . tsu ta wa shi ma shi' ma to*
la ku mi to.

No. 2.—*me ku shi mi to gu ne shi 2 hi ki te shi me ko fu ri fu mu ka 4 to*
shi fu ri a te ma pa se me da shi ta mi to . . . bu chi ko.

No. 3.—*hi ro ku wa ta ki a te ma pa ka shi ra fu ri fu ri ya me shi po ku.*

No. 4.—*ta ki sa i fu wa ta ga ye hi to ki shi po ku fu wa la ma ku a te ma pa mi to.*

In Japanese order, this is :

No. 1.—*Ri 4, 3 fu to, Maka-Wala ka . . . tsu tarashi Mashima Tolaku mito.*

No. 2.—*Mekushi mito gunshi 2 hikite shimeko Furi fumuka 4 toshi Furi Atempa semedashita mito . . . buchi ko.*

No. 3.—*Hiro kuwa taki Atempa kashira Furi Furi yame Shipoku.*

No. 4.—*Taki saifu watagaye hito ki Shipoku fu Wala-Maka Atempa mito.*

The translation of this valuable document is: "Mashima, king of Tolaku, the general of the king of Mekushi, overthrew in battle Maka-Wala, twelve hundred, three score and ten. Furi having resisted four years two summons to withdraw, the king drove him by force out of Atempa and . . . put him to death.

"The great fire burns Furi, the captain of Atempa, and Shipoku, the wife of Furi. It also burns a man transgressing the peace. The father of Shipoku is Wala-Maka, the king of Atempa."

The other inscribed tablet from Iowa was found in 1878, in a mound not far from that which contained the cremation scene. Its inscription is very brief, consisting of four characters to the left of a rude effigy, and three, with signs of numeration, to the right. Between the two groups, and above the head of the figure, is the representation of a copper axe, and over the whole are carvings in imitation of two of the stone pipes, exhibiting animal figures, that were found in the mounds. The inscription, so far as the numerals go, must be read in the light of Mashima's record, for it presents in part a new system of notation.

No. VII.

Left side : *Maka Wala.*

Right side : *Buchiko* = 4 $\bar{\nu}$ 3, 1, 10, 2.

In English :

"Maka-Wala
Killed 1272."

Here the parallels must be symbols of the *ri toshi* or period of 300 years; the *vi* on its side must similarly represent the old word for

twenty years, *futachi*, now changed to *hatachi*, and the one, ten and two
ments explain themselves. Maka-Wala must thus have been put to
death two years after the burning of his daughter Shipoku and his son-
in-law Furi, unless the four years of Furi's refusal to surrender be taken
into account. At any rate, the date of Maka-Wala's overthrow is 1272
after Buddha, or 793 A.D., and that of his death is 795 A.D. It may be
that Furi and Shipoku were murdered and their bodies burned in 797.
This for America is a great antiquity, and carries us back to the begin-
nings of Mexican history. Maka-Wala was a contemporary of Charle-
magne, and represents the earliest band of Mound Builders that, landing
in Vancouver, found their eastern way through our North-west to Lake
Superior, and thence, down the Mississippi, to Iowa.

I have no time here to comment on these seven inscriptions. A full
commentary, connecting them with the Siberian series and with frag-
ments of native tradition, will be found in my Hittite Track in the East,
whenever that book may be published. Four dated tablets, extending
from 793 to 1261 A.D. are more than the most sanguine explorer of
American antiquities ever hoped for, yet they may be only the first fruits
of an abundant historical harvest. At any rate, the publishing of the
foregoing seven documents will enable students to intelligently read any
similar relics that may come in their way, whether engraved on prepared
stones or on rock faces. That many such will yet reward the labour of
explorers I cannot doubt. Should what has been written encourage the
disingenuous to forgery, the fraud will not long deceive, unless its perpe-
trator be a consummate master of archaic Japanese. But no such scholar
would stoop to the meanness of archaeological deception.

NOTES.

Analysis of the Inscriptions.

No. I. (Varmouth.)

wabi, peacefully in Sib. and Ind. inscript., now *wa* is peace.

deku, past of *de-ru-ta*, to go out.

Kutarade, proper name, (?) Iroquois Katorats, "The Hunter."

bushi, a soldier.

goki, brave, but Sib. and Ind. have *goka* for *goku*, eminent.

No. II. (West Newbury.)

Dehana, proper name probably of Tionon Hurons.

no, genitive particle.

Mehashi, proper name, in Japanese "The Quick."

bushi, as in No. I.

setsu, season, period, time.

no, as above.

*fu*ye, an old word meaning "the sum"; survives in *fu*ye-ru, to add, and *haye*-ru, to pile.

fu, common Sib. and Ind. abbreviation for *futa*, two, and *futachi*, now *hatachi*, twenty.

Torishime, proper name, in Japanese "to control, keep in order."

tama often stands in Sib. and Ind. for *atome*, heir.

No. III. (Grave Creek.)

Katogo, proper name, perhaps Jap. *Kataku*, "The Firm."

mito, universal Hittite word for king, from *mi* honorable, and *to* door. Replaced by

mikado, with same meaning.

dote, a mound.

uchi, a house.

bateri, now *hateru*, to finish. Many initial aspirates are changed labials in Japanese.

fu, for *futachi*, twenty, as above.

taye-ru, to come to an end.

ri now denotes a Japanese mile, but in Sib. and Ind. is a period of 300 years.

miisu, old form of *mitsu*, six.

Buda, proper name, Buddha.

li or *ri* is law, rule, principle.

No. IV. (Stark County.)

ko is the only word requiring explanation; it denotes a child or the young of anything.

No. V. (Brush Creek.)

mito, king; see No. III.

itsu, five.

li or *ri*; see No. III.

No. VI. (Davenport Cremation.)

line 1. *ri*, see above; also *fu* for *futachi*.

to, ten.

Maka-Wala, proper name, perhaps *Maki-wari*, the "Splitting Axe."

ka . . . *tsu* is doubtful, because the stone is broken, and the characters are peculiar; *kutsu*, to conquer, overcome.
tawashi for *taoshi*, to cast down, overthrow.

line 2. *gunshi*, a military officer.

hikite for *hiki*, *hikita*, to retreat, retire.

shimeko, noun derived from *shimeshi*, to admonish, instruct.

sumuka, old form of *sumukai*, to oppose, resist.

toshi, year.

semedashita, past of *semedashi*, to afflict and expel, persecute and cause to leave.

buchiko, probably for *buchi-korosu*, to beat to death.

line 3. *hiro*, broad, spacious.

kuwa, now *kuwaji*, a fire, conflagration; all compounds are made up of *kuwa*, alone.

taki, to burn.

kashira, a captain.

yame, for *yanome*, widow, as in Siberian.

line 4. *saifu*, for *saiyo*, also.

watagaye, from *wa*, peace, and *tagaye-ru*, to transgress, break, not conform to.

hito, a man, a Hittite.

ki, is, part of the verb *suru*, to be, to do.

fu, old word for father in composition, as in *fu-shi*, father and child, *fu-bo*, father and mother.

No. VII. (Davenport Effigy.)

buchiko; see No. VI., line 2, at end.

WALES AND ITS LITERATURE.

BY NEIL MACNISH, B.D., LL.D.

[Read 1st February, 1896.]

In his "Eastern Origin of the Celtic Nations," Pritchard thus writes: "There are six dialects of the language termed Celtic which may be said to survive, as five of them are still spoken, and one of them, viz., the Cornish, is sufficiently preserved in books. These six dialects are the Welsh, the Cornish, the Armorican, the Irish or Erse, the Gaelic or Highland Scottish, and the Manks. The three former are the relics of the idiom of the ancient British; the three latter of that spoken by the inhabitants of Ireland." That division of the Celtic dialects is sufficiently lucid, and may be accepted, with the exception of the undue importance which is assigned to Irish, as if it were older than the Gaelic of Scotland. Thomas Stephens, the learned and ingenuous author of the *Literature of the Kymry*, remarks "that Welsh or Walsch is not a proper name, but a Teutonic term signifying *strangers*. The proper name of that people is Kymry. They are the last remnant of the Kimmerioi of Homer, and of the Kymry (Cimbri) of Germany. From the Cimbric Chersonesus (Jutland) a portion of these landed on the shores of Northumberland, gave their name to the County of Cumberland, and in process of time followed the seaside to their present resting-place, where they still call themselves Kymry, and give their country a similar name, *Kymru*." It is difficult to ascertain what the political divisions of Great Britain were at any given time, in those unsettled ages which extend over the invasion of the Romans and of subsequent nations, until an approximation at least to the settled divisions of more modern days was reached. The position of the tribes or nations that were contending for the superiority in Britain was continually changing, according to the chances of war. The Celtic inhabitants fought bravely for their homes and firesides, and surrendered what they had every reason to regard as their own country only after a bold and fearless effort to retain possession of it, and to expel those who had no claim on it, save that which came from unprincipled adventure, and an irrepressible love of plunder. Skene, in his *Four Ancient Books of Wales*, thus writes: "We find the seaboard of Wales in the west in the occupation of the Gwyddyl or Gaels, and the Cymry confined to the eastern part of Wales only, and placed between them and the Saxons." Skene is of the opinion that "the Gaels who," according

to his own admission, "occupied the seaboard or western portion of Wales were not a portion of the original inhabitants of the country, but immigrants from Ireland who chanced to make their homes in that part of Wales." There is *prima facie* a stronger likelihood that the Gaels in question were the remains of a Celtic population, older in point of time and occupation, than that they came from Ireland and finally settled in Wales amid the fluctuations which then obtained among the nations that contended for supremacy in Britain.

Edward Lhuyd, the Father of Celtic Philology, has this opinion to advance: "There are none of the Irish themselves that I know of, amongst all the writings they have published about the origin and history of their nation, that maintained they were possessed of England and Wales; and yet whoever takes notice of a great many of the names of rivers and mountains throughout the kingdom will find no reason to doubt but that the Irish must have been the inhabitants when those names were imposed upon the rivers and mountains."

With reference to the Ogam inscriptions which are to be found in Wales, Professor Rhys asserts that "the Celts who spoke the language of the Celtic epitaphs were in part the ancestors of the Welsh and Cornish peoples. In other words, they were the Goidels belonging to the first Celtic invasion of Britain, and of whom some passed over into Ireland and made the island also Celtic. Some time later there arrived another Celtic people with another Celtic language. These later invaders called themselves Brittones, and seized on the best portions of Britain, driving the Goidelic Celts before them to the west and north of the island, and it is the language of these retreating Goidels of Britain that we have in the old inscriptions, and not of Goidelic invaders from Ireland. Their Goidelic speech which was driven out by the ever-increasing dialects of the Brythones was practically the same language as that of the Celts of Ireland, of Man, and of Scotland."

"It has been ingeniously contended that the root in *Britanni* and *Brittones* is identical with the Welsh *brith*, spotted, fem. *braith*. It would appear, therefore, that the word *Brythion* and its congeners meant a clothed or cloth-clad people. The name may be regarded as meant to distinguish the Brittones from the natives whom they found in possession, and whose clothing may have consisted of the skins of the animals that they killed. . . . It is safe to limit the name to the non-Goidelic branch of the Celts of the second invasion."

The Welsh have a copious literature. As well in prose as in verse, they have many works of venerable antiquity and, therefore,

of very great value and interest. For faithfulness to their language and traditions; for a resolute determination to uphold their language and to cultivate it assiduously in these modern days; for a liberal, national recognition of excellence in writing their language either in prose or verse; for a refreshing absence of everything that betokens a desire to ignore or forget their language; for a well-arranged system to make every Welshman proud of his language and of his people and country, the palm has to be awarded to the Welsh among the Celts of Great Britain and Ireland. A Welsh clergyman, the Rev. Griffith Jones, of Llandower, was instrumental in exciting among his fellow-countrymen a love of their native language and a desire to be able to read it and to study its literature for themselves. He was the first who made an attempt of any importance to erect schools for the instruction of the people in their own language. It was in 1730, that he began his patriotic labours which have proved of incalculable service to Wales. Mr. Jones devoted thirty years of his life to his patriotic work, and had the satisfaction of gaining many co-adjutors in his laudable efforts to educate his countrymen in their own language. He was successful in establishing two hundred and twenty schools during his life-time. It redounds to the credit of the Britons that they were able, in the face of the legions of Rome, to preserve their distinctive existence to a very large extent. The Welsh exhibited all the characteristics of the genuine Celts in their long, determined and gallant resistance to the attempts which English monarchs made to deprive them of their liberty and to annex Wales to the kingdom of England. It may be conceded that from the departure of the Romans in 446 A.D., until Llywellyn ap Gruffydd, was killed in 1282, and with him the liberty and independence of Wales were lost, the Welsh had to fight for their homes and firesides.

The Eisteddfodau—those sittings or sessions or congresses of bards or literati, which are now held every year—have always possessed an immense power, so far as inducing the Welsh people to love their language, their literature and the traditions of their country is concerned; so far as determining to be faithful to their nationality is concerned; so far as refusing to forget their language on grounds of strict utilitarianism, and to ignore or think lightly of their literature, is concerned. A very remote antiquity is assigned to the Eisteddfod. It is said that it originated in the time of Owain ap Maxen Wledig, who at the close of the fourth century was elected to the chief sovereignty of the Britons on the departure of the Romans. It is said that the Gorsedd or Assembly, from which the Eisteddfod has sprung, is as old as the time of Prydain, the son of Aedd the Great, who lived many centuries before the Christian era. The Eisteddfodau have a very strong hold on the

Welsh imagination, associated as they are with all that is dearest and most worthy of remembrance in the traditions of the past. In their devotion to their annual gatherings and contests, and in the natural pride which every Welshman has in those time-honoured assemblies, there is a force which is powerful enough to oppose the utilitarian spirit of our age, to stem the tide of hostility to the perpetuation of the Celtic languages, and to insure for Welsh a long life of healthfulness, vigour and independence. The biographer of the Rev. Thomas Price, whose bardic name was Carnhuanawc, and who was one of the best and most enthusiastic Welsh scholars of his day, has this felicitous definition of the Eisteddfodau to give: "The word Eisteddfod signifies a public session of persons formally convoked at stated periods in one part or other of the Principality of Wales, for the enjoyment of intellectual intercourse, for the exercise of mutual emulation, and for the promotion of Cambrian literature, rhetoric, poetry, music and all ingenious and useful arts within each specified district, that district extending in the days of the native princes throughout the four provinces of Wales and the Marches. Such periodical meetings have their historic records from the sixth century of the Christian era, and appear to have been held among the Cymry from immemorial time, sometimes encouraged by the auspicious countenances and liberal rewards of sovereign princes and wealthy nobles, and at others solely sustained among the commonalty by the irrepressible energy of native genius." In his introduction to his *Lectures on the Study of Celtic Literature*, Matthew Arnold thus writes to the Welsh: "When I see the enthusiasm these Eisteddfods can awaken in your whole people, and then think of the tastes, the literature, the amusements of our own lower and middle class, I am filled with admiration for you. It is a consoling thought, and one which history allows us to entertain, that nations disinherited of political success may yet leave their mark in the world's progress, and contribute powerfully to the civilization of mankind."

The Principality of Wales embraces twelve counties, of which Anglesey, Carnarvon, Flint, Denbigh, Merioneth, Montgomery go to form North Wales; and Brecknock, Cardigan, Carmarthen, Radnor, Glamorgan, Pembroke constitute South Wales. The population of Wales was 1,111,780 in 1861, and 1,217,135 in 1871. Those figures, so far as they go, prove that the tide of emigration from Wales is by no means so strong as it is from Ireland and the Highlands of Scotland. There appears to be greater stability among the Celts of Wales; and hence arises a remarkable facility for perpetuating their language and their traditions, in spite of their nearness to the English-speaking inhabitants of the counties that lie to the east and south of them. The Celts whom

the Romans found in Britain were able to hold their ground very tenaciously, and were not compelled to submit to absorption or to menial servitude, or to retire before their conquerors to the remotest portions of the country. The words of a certain writer regarding the people of Britain after the Romans had finally withdrawn from it are to this effect:—“They were Britons, modified no doubt in every respect by their long subjection to Rome, but still essentially a British, *i.e.*, a Celtic people, and it is further clear that they were a people who had been less modified by Roman influences than the inhabitants of the other provinces of the empire.” Carnhuanawc, though a Welshman of extensive scholarship and excellent character, is perhaps employing extreme language when he affirms that “the Welsh poems bear evidence of the existence of a spirit of patriotism in a far greater degree than those of the Irish or the Gaelic.” As regards the quantity of matter before the public, both in verse and prose, as well as the number of authors whose works are extant, the Welsh language has vastly the advantage over the Irish and Gaelic. In priority of date the advantage is also on the side of the Welsh. In historical realm, the Welsh poetry greatly excels that of the other two languages, inasmuch as it treats of actual occurrences, whereas the other two deal more with fiction.” It is to be feared that those strong asseverations, coming though they do from so excellent an authority as Carnhuanawc, are to be accepted with some degree of reservation; for they certainly exhibit the extraordinary patriotism which he cultivated assiduously in his own case, and which he sought to impress very strongly on all the natives of the Principality.

The literature of Wales is, however, very extensive. There is extant a large number of Welsh MSS. With the exception of MSS. that are in the British Museum and in the libraries of Oxford and Cambridge, the Welsh MSS. that are extant are in private collections. To a very important collection, the name Hengwrt collection has been given, containing as it does MSS. which were collected by Jones of Gelly Lyndy between 1590 and 1630, and by Robert Vaughan, of Hengwrt, who died in 1666. There was an agreement between the two friends that on the death of one of them, the survivor should become possessor of the whole collection of MSS. As Mr. Vaughan survived his friend Jones, the MSS. became his property, and thus obtained the name of the Hengwrt collection. The collection, amounting to about four hundred volumes, was subsequently given or bequeathed to Wynne of Penraith.

The *Myvyrian Archæology* of Wales: such is the name of a collection extending over three volumes, which contain the text of a large number of the poems and other compositions that are to be found in Welsh

MSS. To the patriotism and indefatigable energy of Owen Jones, the honour belongs of preparing and publishing the work in question. Jones was born before the middle of the last century in the vale of Myvyr which has given its name to his *Archæology*. He pursued the trade of furrier in London, and was successful in amassing a fortune that he generously expended in the transcription of MSS. which he eventually published with the designation that has been mentioned. His *Archæology* is regarded as the great repertory of the literature of his nation. The Myvyrian MSS., which are now in the British Museum amount to forty-seven volumes of poetry, two thousand Englynion, and fifty-three volumes of prose. Skene published the *Four Ancient Books of Wales* with an English translation. They are:

- (a) The Black Book of Caermarthen.
- (b) The Book of Aneurin.
- (c) The Book of Taliessin.
- (d) The Book of Hergest.

A particular importance attaches to the *Archæologia Britannica* which was prepared by the famous Edward Lhuyd. The first place has by common consent been assigned to him among Welsh philologists. He broke, as it were, fallow-ground in the Celtic portions of Great Britain and Ireland. He thought so little of danger and fatigue, in those early days of dangerous navigation, as to expend five years in the countries and among the islands where members of the Celtic family were to be found, that he might learn their language and become familiar with their literature. His *Archæologia Britannica* was published in 1707. The collection which he made of Celtic material must have been both extensive and valuable. Owing to his premature death, the second book which he had in contemplation was never published. Through various causes, his literary treasures were subsequently lost, and thereby Celtic learning was deprived of much useful and rare material. It is clear from the tuneful commendations in Latin and Gaelic verse which are prefixed to his *Archæologia* that Lhuyd made a favourable impression on the clergymen with whom he came in contact. Many of them were such elegant scholars as to commit to faultless verses their high appreciation of Lhuyd and his arduous services in behalf of Celtic literature.

The popularity which MacPherson's translation of the poems of Ossian obtained when it was published after the middle of the last century, must have exerted considerable influence on Welsh scholars, insomuch that they turned their attention to the oldest portions of the literature of the Principality. Evan Evans, Edward Jones, Edward Williams, Owen Pughe, Sharon Turner, Edward Davies and others made important con-

tributions of larger or smaller magnitude to the literature of Wales, to bringing to light its hidden treasures, to deciphering and explaining the more ancient and unintelligible Welsh MSS., and to exciting among English readers a desire to gather some acquaintance at least with the literature of the Britons. Neither in Irish nor in Welsh literature is there any ancient poetry that can be placed on a footing of equality with the poetry of the Ossianic age—with the poems of Ossian, Ullin and Oran. There are no poems in Welsh literature to be compared, in point of grandeur of conception and of continuous narrative and powerful sentiment, with the poems of the Bard of Selma. The enthusiastic admirers of Ossian claim for him a much earlier date than that which is assigned to Taliessin. It is generally conceded that the most important books or treatises that have been written in more recent years had as their authors Carnhuanawc, the talented and patriotic clergyman Thomas Price; Thomas Stephens, the author of the *Literature of the Kymry* and several other works; and Skene, the learned editor of the *Four Ancient Books of Wales*, containing the Cymric poems attributed to the bards of the sixth century. Justice is merely done to Mr. Skene when it is said that he has rendered immense service to the Celtic literature of Scotland, his native country, and that he had no superior in judgment and in learning in the very abstruse sphere which he selected for his peculiar labours. His *Four Ancient Books of Wales* embrace the *Black Book of Caermarthen*, the *Book of Aneurin*, the *Book of Taliessin*, and the *Red Book of Hergest*. "It is in those four MSS.," Skene writes, "that the oldest known texts are to be found, and in order to avoid any risk of its being coloured by my own views, I refrained from attempting the translation myself, and to obtain it, if possible, from the most eminent living Welsh scholars." Mr. Skene bestows this commendation on Mr. Stephens: "His work is written with much ability and is in fact the first real attempt to subject these poems to anything like a critical analysis." Thomas Stephens, and the modest, learned and indefatigable Irish scholar Eugene O'Curry, are entitled to a similar meed of praise. Their painstaking labours in the interest of their respective countries have surely earned for them an honourable and a permanent place in the affections of the Welsh and Irish.

Thomas Stephens was essentially a self-made, and to a large extent a self-taught man. He was stimulated by the *Eisteddfodau* to prosecute his researches into the less-known channels of Welsh literature. He was distinguished for the breadth and accuracy of his views, for his unflinching love of truth, and for his active sympathy with every movement that tended to improve the position of his fellow-countrymen. He preferred truth to patriotic pride, and incurred disfavour because he

refused to accept legendary accounts of Welsh greatness which could not bear the strong and searching light of honest and impartial investigation.

Arthur and the Knights of the Round Table have obtained particular celebrity in Welsh literature. Lord Tennyson has, in his *Idylls of the King*, woven into chaste and musical verse the tales of Arthur and his Knights. The common tradition is that Arthur was the son of Meirig ab Tewdrig, or of Uthyr-Wonderful—a prince of the Silurian Britons; that about the year 517 A.D. he was summoned to assume the leadership of his people against the foes of his country; that he was successful in many battles; that his career as a warrior came to a close in the battle of Camlan in 542; and that his remains were interred at Glastonbury. Legendary exaggerations have gathered round Arthur to an almost incredible extent. Skene, who has thoroughly examined the four oldest Welsh MSS. that are extant, has this statement to make regarding Arthur: "It is very remarkable how few of these poems contain any notice of Arthur. If they occupied a place, as is supposed, in Welsh literature subsequent to the introduction of the Arthurian Romance, we should expect these poems to be saturated with him and his knights, and his adventures; but it is not so. Out of so large a body of poems there are only five which mention him at all, and then it is the historical Arthur, the Guledig to whom the defence of the wall was entrusted, and who fights the twelve battles in the north and finally perishes at Camlan." Stephens has no confidence in the truthfulness of the eulogies that have been bestowed on Arthur. His distinct language is, "Arthur, an insignificant chieftain in the sixth century, grew into a valorous warrior in the eighth, and by the twelfth had become warrior of the whole civilized world." Arthur is confessedly a Kymric hero. Nothing can be more apparent to the student of Cambrian literature than that the bards were among the last persons in Europe to admit the credibility of the Arthurian tales. We must, therefore, seek the first traces of the Arthur of Romance among the Kymry of Armorica. The people of Armorica, and of ancient Gaul generally, are supposed to have been the same people as the Colonists of Britain; and this would seem to be the reason why, during times of distress, the Britons fled there for refuge. The Kymry, who left their native land on these occasions, carried with them the histories of their ancestors. Many of these were the Kymry of Cornwall, which, next to Wales, formed their last resting point; and these would very naturally exalt the actions of their countryman Arthur. The dialect of the Britons bears a closer resemblance to that of Cornwall than to the language of the Principality. Rhys of Tewdwr (1077, A.D.), is reported to have brought from Brittany the bardic system of the Round Table to Wales. The conclusion is,

therefore, both legitimate and irresistible, that the Romantic Arthur is a creation of the Armorican Kymry."

It is beside my purpose to enter into an examination of grammatical peculiarities of the Welsh language. Suffice it to remark that when a comparison is made between the grammatical structure of Welsh and of Irish and Scottish Gaelic, evidence sufficiently lucid and abundant is available to show that Irish and Scottish Gaelic is much older than Welsh, and that its grammatical forms lend strength to other reasons that indicate that Welsh is a later language than either Irish or Scottish Gaelic, and, therefore, that those who speak and spoke Welsh—the *Brittones*—followed at a long interval the Irish and Scottish Gaels in their immigration from the continent of Europe into Great Britain and Ireland.

As to the zeal with which Welsh scholars have always determined to develop the intrinsic strength of their own language; we have this explicit commendation from Thomas Stephens: "The language of the Kymry is rich in native roots, and several of the bards who lived during the twelfth and succeeding centuries have done much to develop its capabilities. They wisely determined to cultivate their own tongue rather than borrow words from others, and as they had clear perceptions of the philosophy of language, the services rendered to their parent speech by the writers of these centuries will ever give them a strong claim upon the respect and admiration of their countrymen. They formed their compound words upon principles really philosophical, and when the number of Kymric words was so great, it will scarcely create surprise that men proud of their language and with intelligence enough to develop its capacities should have produced lasting monuments of their own skill and of the inherent wealth of the Cambrian language."

As is the case with English, and German, and Gaelic, and Irish, the translation of the Holy Scriptures has exerted a most beneficial effect on the prose literature of Wales. Doubtless there is to be found in that translation, the purest and best Welsh that was obtainable or available when it was made. To Bishop Morgan the honour belongs of completing and publishing a translation into Welsh of the Scriptures of the Old and of the New Testament. William Morgan was a native of the County of Carnarvon. He was educated at St. John's College, Cambridge. He obtained a vicarage in Montgomeryshire in 1575. In 1578 he removed to a living in Denbighshire, where he completed his translation of the Bible into Welsh. His intention at first was to translate the books of the Pentateuch merely. He was induced by Whitgift, the Archbishop of Canterbury, to undertake the translation of the whole Bible. In 1588 the Welsh Bible was published, with a dedication to Queen Elizabeth.

Success attended Morgan, for in 1594 he was elected Bishop of Llandaff, and in 1601 he was translated to the Bishopric of St. Asaph. He died in 1604. It appears that few efforts were made before the time of Morgan to translate any portion of the Bible for the benefit of the Welsh people. There was published in 1551 by William Salisbury, a lawyer, a translation of the portions of Scripture that were appropriate to the communion service. In 1567 he published an entire version of the New Testament into Welsh, in the preparation of which he was aided by the Bishop of St. David's, Dr. Richard Davies, and by the Rev. Thomas Huet, a precentor of St. David's. There is reason for believing that before this time a translation was made of the Pentateuch into Welsh which was never published.

Singular to relate, an Act of Parliament was passed in 1563, in the fifth year of the reign of Queen Elizabeth, directing that a Welsh version of the Old and New Testament should, under the superintendence of the four Welsh bishops and of the Bishop of Hereford, be prepared for general use in the Welsh churches on the first of March, 1566, and in the event of a non-compliance with that enactment a penalty of forty pounds was to be inflicted on each prelate. Assistance was given to Morgan in the preparation of his translation of the Holy Scriptures by a number of eminent Welsh scholars. The version of the New Testament which was prepared and published by William Salisbury, was adopted by Morgan with some alterations. The Welsh Bible has always been regarded, even from a literary point of view, as the most valuable work in the language. It has been said of it that, after full admission has been made of all its imperfections, it must be regarded as among the noblest attempts to familiarize modern nations with the truths of revelation, and as an imperishable monument of the zeal, learning and industry of its author.

THE FUR TRADE, 1783-7.

BY CAPT. E. CRUIKSHANK.

[*Read 23rd February, 1895.*]

Towards the end of the revolutionary contest, the fur trade had distinctly declined in importance, partly from the disturbed state of the country, but partly also in consequence of the very serious ravages of hunger and disease among the Indians.

In March, 1783, Langlade reported that "there were forty Saulteaux, men, women and children who were eating each other because of the famine in La Baye des Noques," and soon afterwards Cadotte wrote from Sault Ste. Marie to say that "all the Indians of Fond du Lac, Rainy Lake, Lac des Sables, and other surroundings, had died of smallpox." At the same time Captain Robertson, the commandant at Mackinac, complained that a certain Mons. Bouché, a Canadian having a Spanish commission, was levying blackmail from the traders on the Mississippi at the head of "a gang of moroders."

One of the first acts of Sir John Johnson after being appointed Superintendent of the Indian Department, was to make a vigorous effort to assert his authority over the traders scattered throughout the vast region to the westward of Detroit, with the object of securing fair dealing with the natives as far as practicable.

"You are in all matters of trade where the Indians are concerned, to see that the utmost justice be done them," he wrote to Alexander McKee, "for which purpose if the interference of the commanding officer should be necessary, you are to make application, as you are to do in all matters where the king's service is concerned, unconnected with the interior economy of the Indian Department."

It was naturally anticipated that the Americans would "employ every effort to extend as far as possible their frontiers in the upper country, to secure in case of a peace some valuable settlements, and to get the fur trade into their hands."

The efforts of the British officers at Detroit were accordingly directed to the restraint of the Indians from further hostilities, and with this object Major De Peyster stated that he had "indulged" the Wabash Indians "with a trader in order to induce them to stay at home and follow their hunting."

But it could not be foreseen that the astute Franklin would obtain almost without asking, from the easy-going British plenipotentiary, the whole of that vast and valuable territory lying between the Ohio, the Mississippi, and the great lakes. It only remained for them to enter into possession. This, however, was no easy task, for the Indians were intensely hostile, and the new republic was weak in administrative ability.

The original North-west Fur Company, called at the time the "sixteen share concern," had dissolved at the end of a single year. In 1781, a new company, known as the "three share concern," was formed for one year, which did not, however, embrace the English River nor Mississippi within the scope of its operations. The success of this enterprise was sufficient to convince the merchants generally of the benefits of combination, and the number of "adventurers" trading in the North-west had in the meantime been reduced to twelve. Consequently, in October, 1783, a general partnership was agreed upon for five years, in which each stockholder was assigned an interest in proportion to his previous trade. The stock was divided into fifteen shares, of which $9\frac{3}{4}$ were allotted to non-residents. The expectations of profit were then so limited that one of the old traders readily accepted an offer of an annuity of 4,000 livres (£166, 13s., 4d. currency) in lieu of dividends. He lived to see a clear profit of £2,000 sterling derived from a single share.

The announcement of the terms upon which peace had been concluded overwhelmed the merchants of Montreal with amazement and dismay, for they not unnaturally feared that the fur trade within the frontier of the United States would at once and forever be lost to them.

These apprehensions, however, soon stimulated them to make increased exertions to extend their trade in the Canadian North-west.

In April, 1784, Benjamin Frobisher, one of the most active partners in the new North-west Fur Company, wrote to the Hon. Adam Mabane, a member of the Executive Council, asking definite information respecting the international boundary westward from Lake Superior, as he suspected that the Grand Portage was included by the treaty within the United States, as actually proved to be the case. At the same time he requested a passport for twenty-eight long canoes, valued with their cargoes at £20,000, which the Company intended to despatch to the North-west in May.

"This large supply," he said, "added to the property the Company have already in that country, demands their utmost attention. They do not know how soon they may be deprived of the immediate, and at present the only, communication from Lake Superior, and on that

account they intend, at their own expense, unless Government prefer to undertake it, to discover, if possible, another passage that will in all events fall within the British line, of which they may avail themselves in case of need. Such an undertaking must prove an arduous one and be attended with great expense, while their success will remain very uncertain, on which account the company are induced to hope that if it is discovered it will be granted to them in full right for a certain term of years, not less than seven, as a reward for their public spirit and the advantages that will result to this province from its discovery."

He advised the establishment of a small military post to command the entrance into Lake Superior at Point Aux Pins, where Mr. Baxter had built a small vessel during his unsuccessful mining operations, and suggested that a settlement might easily be founded at that place.

These proposals were favorably received by the Governor, who immediately instructed Captain Robertson to examine the coast near Point Aux Pins and report without delay. Early in June Robertson made the necessary exploration and pronounced in favor of Tessalon, "a beautiful and capacious bay and one of the best harbors on Lake Huron," with good soil and "a very advantageous fall for mills on the River Tessalon, and a large pinery adjacent." He had even sent a party of men to clear the ground for a fort when orders were received to abandon the project, as there was reason to believe that the "posts in the upper country" would not be given up "until the Americans manifested a stronger inclination (than they have hitherto done) to fulfil on their part the articles of the definitive treaty."

Robertson also reported that he had obtained "some intelligence from white men and Indians of a very fertile and advantageous tract of land between Lakes Huron and Ontario, and by communication that way the trade with Canada must be carried on to put us on a footing with our neighbors from the colonies."

In July, Messrs. Benjamin Frobisher and Simon McTavish arrived at Mackinac to make arrangements to suit the new state of affairs, and Robertson wrote to the Governor: "With them I have had several conferences with regard to the future communication to this country so as to enable them or others to trade in those parts on a footing with the Americans, and after every inquiry, that between Lakes Ontario and Huron is the only one to be attempted, and that very practicable, by shortening the road greatly and avoiding the Niagara carrying place and any interference with our neighbors." He evidently referred to the route from Matchedash Bay to Toronto, which was little used and had

become almost forgotten until Robertson declared his intention of returning that way to Quebec when relieved from his command.

In August Mackinac was unexpectedly menaced by an attack from the Ottawas, and the commandant was obliged to summon the traders to his assistance. They naturally complied with alacrity, as there were 4,000 packs of furs in store, 800 of which belonged to the North-west Company.

About the same time the merchants at Detroit, having a large quantity of valuable peltry on hand, asked leave to forward it to Schlosser in three small private sailing vessels, then afloat upon Lake Erie, while the King's ships were otherwise employed, a request which was readily granted by Lieutenant-Governor Hay, immediately after his arrival there.

"The commerce of this place," Hay wrote to Mr. Nepean, "is becoming more and more considerable. The peltry sent from it this year will amount to £100,000 sterling, all of which is the produce of English manufacturers except a small portion of rum, and I think, if the post is not given up, it will increase, for the Spaniards cannot send coarse woollen manufactures up the Mississippi so cheaply as the English can by this communication, a part of which they have this year bartered for their commodities, and in short cannot carry on their trade without them while we keep possession of the lakes."

The North-west Company executed their project of exploration by sending a large canoe to examine the north shore of Lake Superior, "navigated by six Canadians under Mr. Edward Umfreville, who has been eleven years in the service of the Hudson's Bay Company, and Mr. Venance St. Germain, both of them men who speak the language of the natives, and who are in other respects very well qualified to execute the Company's intentions.

"Their instructions were to proceed to Lake Alempigon, and thence in a west direction by the best road for transportation of goods and canoes to the River Ouinipique (Winnipeg) at or as near as may be to the Portage de L'Isle, and by letters received from them at Lake Alempigon, 30th June, it appears that they had met with innumerable difficulties from the want of Indian guides, but they then had one who had undertaken to conduct them to Lake Eturgeon, and they expressed the most sanguine hopes of getting forward from thence to the River Ouinipique."

In anticipation of the discovery which this party was expected to make, the Company applied for the "exclusive right to the passage they

may discover from the north side of Lake Superior to the River Ouinipique, and also of the trade to the North-west either by that passage or by the present communication by the Grand Portage for ten years," urging in support of their petition that they were the only persons that had any "interest or connection in that country."

They took advantage of this opportunity to describe the extent of their trade and the manner in which it was conducted.

"The inland navigation by which the North-west business is carried on is perhaps the most extensive of any in the known world, but is only practicable for canoes on account of the great number of carrying places. To give your Excellency some idea of which, there are upwards of ninety from Montreal to Lake du Bois only, and many of them very long ones.

"Two sets of men are employed in this business, making upwards of 500, one half of which are occupied in the transport of goods from Montreal to the Grand Portage in canoes of about four tons burthen, navigated by eight to ten men, and the other half are employed to take such goods forward to every post in the interior country to the extent of 1,000 to 2,000 miles and upwards, from Lake Superior, in canoes of about one and a half tons burthen, made expressly for the inland service, and navigated by four or five men only, according to the places of their destination.

"The large canoes from Montreal always set off early in May, and as the provisions they take with them are consumed by the time they reach Michilimackinac, they are necessitated to call there merely to take in an additional supply, not only for themselves but also for the use of the canoes intended for the interior country and the consumption of their servants at the Grand Portage, but as these canoes are not capable of carrying the whole of such provisions it thence becomes necessary to have a vessel or boats upon Lake Superior for that transport only, and the utmost despatch is required that everything may be ready in point of time to send off their supplies for the interior country, for which purpose the goods, provisions, and everything else required for the outfits of this year must be at the Grand Portage early in July, for the carrying place being at least ten miles in length, fifteen days are commonly spent in this service, which is performed by the canoe-men, who usually leave the west end from the 15th July to the 1st August, according to the distance of the places they are intended for.

"Their general loading is two-thirds goods and one-third provisions, which not being sufficient for their subsistence until they reach winter

quarters they must, and always do, depend on the natives they occasionally meet on the road for an additional supply, and when this fails, which is sometimes the case, they are exposed to every misery that it is possible to survive, and equally so in returning from the interior country, as in the spring provisions are generally more scanty. In winter quarters, however, they are at ease and commonly in plenty, which can only reconcile them to that manner of life and make them forget their sufferings in their annual voyage to and from the Grand Portage.

"The property the Company have already in that country, exclusive of their houses and stores and the different posts, as appears by the settlement of their accounts this present year; amounts to the sum of £25,303, 3s., 6d. currency, and their outfits for next spring, which will be sent from Montreal as soon as the navigation opens, will not fall much short of that sum, so that the Company will have an interest in July next of about £50,000 original cost in furs, to be sent to Montreal by the return of their canoes, and in goods for the interior country, by which your Excellency may judge of what may be expected from that trade when in our power by an exclusive right for ten years to explore the country and extend it."

In a few months this was followed by a second memorial from Peter Pond, who described himself as a partner in the Company, and who had been actively engaged in the exploration of the North-west in pursuit of trade for ten years. Pond declared that he had obtained positive information from "natives who have lately been on the shores of North Pacific Ocean," that the Russians had lately established a trading-station there, and further that he was credibly informed that ships were being fitted out in the United States under "the command of experienced seamen (who accompanied Captain Cook in his last voyage) in order to establish a fur trade upon the north-west coast of America at or near Prince William's Sound." From the carefully drawn map which accompanied his memorial, it appears that Pond had visited Fort Dauphin in 1775, and in 1776 and 1777 reached the site of the most distant trading post established by the French upon the Upper Saskatchewan. From 1778 to 1784 he had wintered near the mouth of the Athabasca. Frobisher traded near the ruins of Fort de Trait in 1774 and wintered in 1777 on a peninsula at Clearwater Lake.

On the 1st of August, 1785, James McGill formally announced the discovery of the new route to the North-west, in a letter to Lieutenant-Governor Hamilton.

"A new road has been discovered from the Lake of ——— or Nipigan, which runs to the N. of Wood Lakes and falls to the discharge of that

lake (which is commonly known by the name of the River) at the distance of fifty leagues from its N.W. termination. It was gone over last summer and found to be more practicable than the road from Grand Portage now in use."

"The upper country trade in general," he remarked, "as now carried on from this place (Montreal) is extended as far south as the mouth of the Ohio; to the westward as far as the rivers falling from that side of the Mississippi will carry canoes, including from the river of ——— (Arkansas?) in latitude 33° S. to the sources of the Mississippi; and to the north-west as far as Lake Arabaska, including the whole north side of Lakes Huron and Superior. The value of the whole I esteem at £180,000 currency for sake of statement, and I believe I am not £20,000 on either side of the realty—£100,000 value, I think, is brought from the country now within the American line as fixed by the late treaty of peace; the other £80,000 I consider as being within our own line."

He strongly urged that the merchants should be permitted to build small decked vessels for the navigation of the lakes instead of being forced to depend upon the "King's ships" to transport their property. "With them," he said, "they can be morally certain of having their goods at market in June or July, and their goods may be imported the same year from England, which will save them from leakage, embezzlement, and waste of their property, besides interest of money, which, you know, is a dreadful moth if once allowed to get to any head."

This reasonable request was backed by a petition from twenty-one merchants of Detroit, and by another from the North-west Company, which had the year before built the sloop *Beaver*, intending to take her up the rapids into Lake Superior, but finding that impracticable, now asked permission to employ this vessel in the navigation of Lakes Erie and Huron. The Detroit merchants asserted that "last year owing to the late arrival of such goods as did reach this post, about one thousand packs of furs and peltry which used annually to be remitted to Detroit have this year, from our inability to supply the traders in time, been sent to New Orleans, and that upwards of fifty of the pettyaugers which left this place last fall loaded with goods proper for the Indian trade, were from their late departure frozen up before they reached the places of destination, and that many traders after a fruitless attendance returned unsupplied." In short, "trade in general and this branch in particular had been much circumscribed and of late nearly ruined."

On the other hand, Dease, the Deputy Superintendent of the Indian Department at Niagara, complained bitterly of the lawless and unprincipled conduct of some of the traders.

"The present state of the Indian trade," he said, "requires regulation. A number of people belonging to the disbanded troops have settled themselves among the Indians on purpose to avoid the restraints of the law. There unmolested, they exercise every species of cheating, etc. Their continual jealousies and quarrels give the Indians the most unfavorable impressions of us. Formerly no person was permitted to trade without a written permission from the Superintendent of Indian Affairs; now every idle fellow commences Indian trader."

Sometime in 1785, a second association of Montreal merchants was formed with the intention of competing with the North-west Company, but in the course of a few months they consented to a union by which four new shares of stock were added to the original sixteen, and the term of partnership extended to seven years.

In April, 1786, a committee of twenty-eight of the principal merchants of Montreal engaged in trading to Mackinac and its dependencies, applied to Sir John Johnson to act as mediator between the Indian tribes in that quarter. For some years the Chippewas had been at war with their neighbours, the Menomonees and Winnebagoes, and the sphere of hostilities had gradually become extended until the Ottawas, Sacs, Foxes and Sioux were numbered among the belligerents, and the life of the trader was beset on every hand with fresh perils, while it offered small prospect of gain.

"Some attempts," they said, "have been made to reconcile the jarring nations, and at times the traders, when on the spot, have so far succeeded as to keep them at peace for a season, the good effects whereof were not less esteemed by the Indians than beneficial to the traders, as by that means the Indians remained unmolested on their respective wintering grounds, which naturally produced a considerable degree of success and advantage to the merchant; but lately the disputes of those nations have arose to a height above the power of the traders, assisted by the officer commanding at Michilimackinac, to control or appease, in consequence whereof the trade has suffered greatly, and unless some remedy is applied in time there is reason to fear the loss of a considerable part of that valuable branch of commerce, in particular the whole of that carried on upon the Mississippi from the Illinois to its source."

Four noted French traders, Cadotte, Reaume, Ainse, and Gautier, were named as suitable persons to deliver messages to the several tribes and induce them to agree to the proposals of a general peace. The number of warriors of the Chippewa nation was estimated at 800; the Menomonees had 150; the Winnebagoes or Puants, 600, and the Outagamies or Foxes, 1,400, while the various clans of the Sioux were sup-

posed to contain not less than 3,000 fighting men. The Sacs, numbering 1,300 men, had recently abandoned their villages on the Wisconsin River, and removed to the west side of the Mississippi to avoid the attacks of the warlike Chippewas, and the Spaniards were now reported to be making vigorous efforts to "attach them to their interest."

In consequence of these representations, Captain Dease was instructed to proceed to Mackinac and make preparations for holding a general council at that place in June, 1787, at which the Superintendent intended to preside in person, and Mr. Joseph Ainese was sent among the Indians with appropriate messages, to advise them to desist from hostilities, and invite their principal chiefs to the conference.

Ainese went from Green Bay by the Fox and Wisconsin Rivers to Prairie du Chien distributing presents and holding "talks" with the Menomenees and Winnebagoes as he passed through their villages. He then visited the Foxes and succeeded in detaining a large war-party which was about to march against the Chippewas. Ascending the Mississippi to the mouth of the Minnesota River he found the Sioux preparing to attack the Chippewas, and not only persuaded them to desist, but to release some of their prisoners. Continuing his journey up the Minnesota through all the Sioux villages, he turned back another large war-party and presented them with a pipe of peace to smoke with their enemies. Marching overland for seventeen days he arrived at the Falls of St. Anthony, in the heart of the country of the Chippewas, and spent the rest of the winter going from village to village describing what he had done among the Sioux, and urging them to make peace. His efforts were attended with such success that on the 14th of March the Sioux, Chippewas, Menomenees and Foxes assembled near the mouth of the Minnesota and concluded a treaty of peace, and agreed to send a deputation of six chiefs from each village to Mackinac.

In May, Ainese returned to Prairie du Chien, accompanied by 196 chiefs, having despatched an equal number by way of Lake Superior, and the entire delegation assembled at Mackinac about the first of July, 1787, when peace was solemnly ratified in the presence of Captain Dease, the officers of the garrison, and traders of the post. The representatives of the different "nations 'invoked' the Great Spirit, the woods, the lakes and rivers, and the very ground they stood upon" to bear witness to the sincerity of their professions of friendship. At their own request, written articles of peace were formulated by Dease and acknowledged to be binding "whilst sun and moon shall remain."

Ainese was then instructed to winter among the Sioux to see that the terms of the treaty were faithfully observed by that fierce and turbulent race.

A REVIEW OF CARVALYN GAILCKAGH OR MANX CAROLS.

BY NEIL MACNISH, B.D., LL.D.

[Read 7th April, 1894.]

Carvalyn Gailckagh: such is the designation which Mr. A. W. Moore, M.A., has chosen to give to an interesting and altogether unique collection of Manx Carols that has been recently published by him. Though he has had able co-adjutors in preparing the carols for publication, his own labours have been so important as to justify him in saying, were he so disposed: *quorum pars maxima fui*. In a paper which I had the pleasure of sending to the Canadian Institute some time ago, I made a somewhat extensive review of another work which Mr. Moore has written, and to which he has given the title of "Surnames and Placenames of the Isle of Man." By the preparation and publication of the Manx carols, Mr. Moore has made another important contribution to the literature of the Isle of Man, and has intensified the claims which he has on the grateful appreciation of Manksmen everywhere, as well as on all lovers of Gaelic poetry. Some twenty years ago the remark was made by an eminent Manx scholar that "Carvals, which may be termed a literature entirely peculiar to the Manx people, consisting chiefly of ballads on sacred subjects, are yet to be found in many an out-of-the-way mountain farm-house, preserved in smoke-dried volumes, redolent of peat. A collection of these would many years hence form quite a literary curiosity, many of them possessing considerable merit. They are yearly becoming more difficult to procure, either from being altogether lost, or the unwillingness of the peasantry to part with their treasured manuscripts. Most of these Carvals are from 50 to 150 years old." The writer whose words have just been cited, has given a lucid statement of the literary value of the Manx Carols. An indirect commendation is thus bestowed on Mr. Moore, who has been successful in collecting and in publishing those Carols. The term *Carvalyn* is not strictly Manx. It is merely an adaptation in Manx of the English word *carol*. It is not to be supposed, however, that the Manx Carols, belonging as they do to the soil of Man, and having no kinship with ballads, resemble the English Christmas Carols. It appears that in former generations, it was customary for young people who imagined that they had poetical gifts, to compose Carols when Christmas was approaching, and to recite them in the parish

Churches. The carols which were successful in meriting the approval of competent critics were subsequently sung or chanted throughout the island. Many of those Carols were doubtless committed to writing, and were preserved in the more remote portions of the island, until Mr. Moore, and other Manx scholars of literary tastes akin to his, determined to search for them, and to bring them out of obscurity to the daylight of the world's knowledge.

It does credit to Prince Lucien Bonaparte, that he was acute enough to perceive the value of the Manx Carols and the consequent necessity of recovering them from the oblivion which would otherwise inevitably overtake them. Prince Lucien Bonaparte has made many valuable contributions to Celtic learning, choosing as he did to exchange the military traditions of his family for the quieter pursuit of learning. To him very great praise is due for the monument which indicates the resting-place of Dolly Pentreath, who was the last person that spoke the Cornish language. Mr. Moore tells in the preface how Mr. Fargher, the proprietor of the *Mona Herald*, and himself, came to unite their energies for the purpose of collecting the Carols of their native island and of putting them in a permanent and intelligent form, for the benefit not of Manksmen merely, but of all who may take an interest in a species of literature so rare and so unique. The Carols are 86 in number. The Manx and English versions of each Carol are given in parallel columns, insomuch that the greatest facility is thereby afforded to every intelligent reader for understanding the matter and the texture of those peculiar poems. As they were, as a rule, incorrectly if not illegibly written, great pains were necessary to decipher them, and to present them in a modern dress. It is obvious that after an expenditure doubtless of great trouble and diligence, Mr. Moore and his skilful co-adjutors, whose important services are very fittingly acknowledged by him, have had remarkable success in their patriotic desire to present those Carols in attractive attire to students of Celtic literature. It is well known that Luther's translation of the Bible into German gave an immediate and a permanent impulse to the cultivation of German literature. Invaluable aid must have been imparted to Manx literature by the publication in 1772 of the translation into Manx of the Holy Scriptures. It is contended that several of the Carols were composed and written before that date, and that as there was no accurate guide or criterion for writing and spelling Manx, there could be neither distinctness nor uniformity in the manner of committing those sacred songs to writing. John Phillips, who was consecrated Bishop of Man in 1635, was, it is said, so much a master of the Gaelic language as to translate into Manx the Common Prayer Book, and, according to a certain authority, the Bible also. There is, however, no valid ground for

believing that any translation of the Scriptures into Manx was made until long after the time of Bishop Phillips. Bishop Wilson was appointed Bishop of Sodor and Man in 1697. "The Principles and Duties of Christians"—the first book that was ever printed in the Manx language, was published by Bishop Wilson in 1699. He was actively engaged along with the Rev. Philip Moore in the translation of the Bible into Manx when he died in 1755. Dr. Mark Hildesley, his successor in the Bishopric of Man, undertook with laudable earnestness the completion of the translation of the Scriptures into Manx. He was frequently heard to say that he wished merely to see the completion of his translations.

On the 28th November, 1772, he received the last part of the translation of the Bible, and on the 5th December of the same year his earthly career terminated. It is manifest that the translators of the Holy Scriptures into Manx went on the principle of spelling the words phonetically, and with as near an approximation as was possible to the manner in which they were wont to be spoken. The expense of printing the Manx translation of the Bible was generously borne by the Society for Promoting Christian Knowledge. In the report of that Society for 1764, statements are made from which the inference is deducible that it was the intention to extend the distribution of the Manx Bible "so far as that no one person of the 20000 natives of the Isle of Man may be destitute of a Bible and a Common Prayer Book in his native tongue, in which they never appeared before." By the publication of the Holy Scriptures in their own language, Manksmen had henceforth a literary guide and standard of which they naturally were glad to avail themselves. The surmise has much to support it, that the authors of the Carols were generally indebted to the Bible for their thoughts as well as for the diction by means of which their thoughts found expression. Mr. Moore correctly states that "by far the greater number of the Carols are devotional rhapsodies which exhort the sinner to repent, by picturing with terrible realism the agonies of hell. . . . Old Testament history also received much attention, the fall of Adam, and the lives of Joseph, Jacob, Jonah and David being favourite subjects." As those Carols were held in high esteem, and were wont to be sung by the peasantry of Man, the moral character of the people must have thus been beneficially affected.

I shall make a few quotations from the English version of the Carols—a version which as a rule does no feeble justice to the original.

In Carval Yn Ullick, or Christmas Carol, these words occur :

"This is the day that Christ was born,
 Why don't I praise his name?
 Why don't I glory give to God?
 For evermore the same.

The hosts seraphic sang on high
 In strains of song refined :
 And we will show God's peace, good will
 And love to all mankind."

In Roish my row flaunys er ny chroo, or Before the Heavens were created, these verses occur :

"Before the light of moon or sun,
 Or star or bright revolving ray,
 Or yet the heavenly powers begun
 To mete exact 'twixt night and day ;
 What was there then ? What was there then
 Before horizon was or time ?"

The first two stanzas in Carval Yonah or Jonah's Carvel, are these :

"The Lord's word came to Jonah :
 To Nineveh go thou down,
 And cry against the wickedness
 That is wrought in that great town.
 And straight rose Jonah early,
 To Joppa's city he came,
 And thereon found a good ship faring
 To Tarshish of world-wide fame."

As Manksmen have an honourable place in the general renaissance of Celtic learning, the publication of the Manx Carols must tend materially to increase the affection of every patriotic Manksmen for his native language and for the traditions of his native island. Though some of the Carols were evidently composed by men who had little or no knowledge whatever of letters ; and, though the sentiments that pervade the Carols are often simple enough, it must be remembered that the carols represent the best and purest language that was spoken at the time of their composition ; insomuch that the Manx scholar of to-day turns naturally enough to those Carols for the best specimens of his native language as it was spoken some two hundred years ago by Manksmen who knew no other tongue than *Chengey-ny-Mayrey*, the mother tongue. As neither Irish Gaelic nor Scottish Gaelic has any form of literature that can be regarded as similar to the Manx Carols, it may naturally be expected that the study of those Carols will afford amusement as well as instruction to Celts everywhere.

Some one has not inaptly remarked that the Isle of Man is "a kingdom within a kingdom". Apart altogether from the political vicissitudes which have passed over Man ; apart from the marvellous tenacity with which Manksmen have adhered to their independence and peculiar constitution, though they had to bear the sway of many rulers ; it has to be

maintained that accessible to every Manksman there is now a large and varied amount of purely native literature. Through the praiseworthy and patriotic liberality and diligence of the Manx Society which was established in 1858, the archives of Manx learning have been investigated, and much at least of all that is best and most inspiring in the literary records of other days and other times has been given to the world in a clear and attractive manner. Manksmen as well as Scotchmen have their Auld Language.

Three armed legs form the present armorial bearing of the Isle of Man. It was Alexander III. of Scotland, who after he had annexed the Isle of Man to his possessions in Scotland, substituted the quaint device of the three legs with the motto, *Quocumque jeceris stabit*, for the ancient armorial ensign of the island—a ship in full sail, with the motto, *Rex Manniae et Insularum*.

In Mona's Auld Lang Syne, these manful strains are found :

Shall Mona's House of Keys be hurled
 By strangers' foul design,
 From the foundation where it stood
 Since auld lang syne?
 No! while the sea-gull wings his course
 Where shoals of herring shine,
 The sons shall prop the father's house
 Of auld lang syne.
Stabit quocumque jeceris—
 Who will not call to mind?
 With Governor, Council and the Keys
 Of auld lang syne.

Ny Kirree fo-sniaghtey, or the Sheep Under the Snow, is a popular song among Manksmen, dealing as it does with the great danger to which sheep are exposed when heavy snow drifts are formed, in which sheep are often found to be entombed. The Loss of the Manx Herring Fleet in 1787 is a poem which, having to do with the lamentable loss of many lives in Douglas Harbour owing to a tempestuous storm that suddenly arose, has sorrowfully and powerfully affected the imagination of Manksmen since that time. Indeed, it is said that until recently "Manx fishermen made a point of remaining in port on the anniversary of the loss of the fleet, whether from superstition or out of respect to the memory of those who perished, is not known." Mannin veg veen, or The Small and Mild Man or Isle of Man, is a song which, as its name indicates, rouses in the heart of every Manksman affectionate feelings for his native island, and for the songs and customs and traditions of the past. The Manx Carols, along with the patriotic and chivalrous songs and poems which are now

placed before Manksmen, must tend materially to strengthen the tide of reverence for the language and traditions of their native island, and to intensify their zeal for cultivating the tongue and studying the poetry of their stalwart ancestors who inhabited the glens and hills, and defended the homes and liberties of Mannin veg veen, in the generations that have passed away.

Of auld lang syne brave Manx,
Of auld lang syne,
The sons so brave, the house shall save,
Of auld lang syne.

THE CELT IN ANCIENT EGYPT AND BABYLONIA.

BY JOHN CAMPBELL, LL.D.

[Read 1st February, 1896.]

In the Transactions of the Celtic Society of Montreal for 1892, the Rev. Dr. MacNish attributes to me the translation of a cuneiform Celtic document after its transliteration by Professor Sayce. Dr. MacNish's own large share in the work of interpretation he fails, with characteristic modesty, to indicate. The document in question is one of the fortunate discoveries made within recent years at Tell el Amarna in Egypt, where an extensive literary correspondence of Canaanitic, Phoenician, Syrian and Babylonian princes, with the later Pharaohs of the dynasty of the Amenhoteps, was brought to light. These clay letters furnish an important historical desideratum in the synchronism of the Pharaohs with the rulers and governors of north-eastern countries. Probably the most important in this respect is that set forth by my learned colleague. Its text is to be found in the Proceedings of the Society of Biblical Archæology for 1889, Vol. XI, pp. 336-339, where Dr. Sayce describes it as a "large tablet of grey clay, well preserved and clearly written." Of its thirty-eight lines, the first two are in Assyrian or Semitic; the remaining thirty-six are in an entirely new language, which Dr. Hugo Winckler and Dr. Sayce suspect to be Hittite. As these eminent scholars have not yet shewn themselves to be possessed of any clear idea of what Hittite speech was, their suspicion is of little value. Granting it to be simply Turanian, Dr. Sayce makes an admission that is fatal to any Hittite connection of the tablet, when, discussing its contents, he says "the possessive *mi* and *ti, tu* have an Indo-European character."

It was no pre-conception on the part of Dr. MacNish and myself that led us to find in the main part of the inscription an ancient form of Celtic speech most nearly approaching old Irish. Our labours upon the Umbrian plates of the Eugubine Tables had given us an insight into the archaic pronominal, prepositional and verbal features of the Celtic tongue, so that a glance was sufficient to make it evident we had before us a purely Gaelic document and no other. There is a vast gap between the date of the Eugubine Tables, 180 B.C., and this Tell el Amarna tablet which goes back to the sixteenth century before Christ, so that there is considerable difference in the language of the compared inscrip-

tions, but the radical characteristics of Celtic speech are manifest in them equally, and lapse of centuries has not so obscured grammatical and lexical forms as to render them untranslatable into the Gaelic of to-day. By its language and by its historical connections the tablet under consideration proves the Celt to have occupied a position of great importance in the early history of the world, when, as nationalities, the purely Aryan peoples can hardly be said to have existed. As the Transactions of the Celtic Society and the Proceedings of the Society of Biblical Archæology may not be generally available, I present Dr. Sayce's excellent transliteration and Dr. MacNish's interpretation of the tablet. Dr. Sayce's proposed Hittite reading I do not reproduce, as it is almost all vaguely conjectural, fragmentary and self-contradictory, in all of which respects it differs from Dr. MacNish's scientifically exact, complete and consistent rendering.

The introductory Semitic lines, leaving out the determinative prefixes, are:—

1. ana Nimuutriya sarru rabu sar mat Miitsri
to Nimutriya great king, king of the land of Egypt.
2. sa Tarkhuundarais sar mat Arzapiki dhema
of Tarkhundara, king of the land of Arzapi, the letter.

Hereafter follow the thirty-six lines of the cuneiform text, with equivalents in modern Gaelic (Erse and Scottish), and translation:—

3. kakti mi kuru-in emesmi dammesmi, turmesmi
h-ugad mi chuirinn ai mas mo damh mas mo tuir mas mo
unto thee I would place my good lands my good people my excellent generals.
4. nitakh-mes galgal ina pir-mes-mi kurra-mes-mi
nitheach mas galgadh in fir mas mo gearrain mas mo
warriors good brave in my good men my good horses.
5. biib-biidmi kurkur-mes-mi gananda
bithim faoidhim cursuir mes mo go an ionnad anudd
I am sending my good messengers as far as to thee.
6. khuumuan kuru-in
comain chuirinn
favour I would place.
7. duukmas kakta khuumaan kuru-in gismestu
do chum h-uca comain chuirinn cais mas do
in order unto thee favour I would place to thy beloved.

8. emesti dammesti turmesti nitakh-mes galgal ina
ai mas do damh mas do tuir mas do nitheach mas galgadh in
*thy good lands thy good peoples thy good captains the good warriors
brave in*
9. pirmesti kurramesti biib-biirdi
fir mas do gearrain mas do bi thu faoidh tu
thy good men thy good horses thou art thou sending.
10. kurmesti khuumaan kuru-in gismestu
cursuir mes do comain chuirinn cais mes do
thy good messengers favour I would place to thy beloved.
11. kaalaatami enuun Irsaapa
cuallaidhe mo inneoin Irsapa
annum
my colleague held over Irsapa.
12. Khalugari tsi anmi in auma Akh turrak-ti
Khalugari ti annam in aomadh Akh torog do
Khalugari the prince to me inclining Akh thy princess.
13. udmi kuin dam an Akh upida anzi
udhmaim coinne damh an Akh obadh gus ise (ionn ise)
to enclose wife people to Akh refusing to her.
14. num si lilil khuudi Akh an sakdu si
'n aom ise lilim cuadh Akh ionn sochaidhe ise
to incline her follow bidding Akh in her army.
15. kaalata uppa salkhuun I sukha tsiliya guskin
cuallaidh ibh sailcunn I suacan teallach cioscain
colleague your body-guard I pot earthen tribute.
16. kuru an ta
cur ann tu (annad)
places to thee.
17. a Akh ya atta lamu kuun da askha kira a
a Akh ia asad lamuighim coinne da ascain cear a
who Akh of the land from thee takes a wife asking offspring who.
18. bibi pi raat mu neitta uppa salkhi egir an da
bibh ibh riadh mo innsidh ibh ciollach eagraidheas ionnta (annad)
are you grief my telling your highness enmity to.
19. arad asta Khalugari tsi attiin amme nik tsi
iarradh aisde Khalugari ti aitnim ammain nic ti
*asking out of Khalugari prince commanding refuse daughter of the
kingdom.*

20. Khalugari tsi an egir papara khuudaak
Khalugari ti ionn eagraidhe as fiafruighe a cuiteach
Khalugari prince in enmity ask who denies.
21. nainaat upi andu
inainadh ob annad (ionnta)
need refuses to thee.
22. arad ta upi anzi kidda anzi kuukta turrak ti
iarradh do ob an ise cead an ise cuich torog do
thy bidding refuse to her permission to her secretly thy princess.
23. Khalugari asmi is Khalugari tsi ta
Khalugari asam eis Khalugari ti do
Khalugari I make hear Khalugari prince to.
24. kuistu nik e kar naas aggaas
coisteachd nic ai caram naas aghaiseach
hearing daughter of land stirs assembly quiet.
25. numu antu nin putik asgaas Matyaas ubbiista-un
'n aomadh annad ionn fuaduighim aice gaise Matyaas ibh aisde-un
adhering to thee to force tribes warlike of Matya you from.
26. zünnuukun khuuma anda
dionasgaim comain annad
dissolving favour to thee.
27. nu Khaate saassa sade Igaid
nai Khaate scuchsaim aiste Igaid
ship Hittite going out of Igaid.
28. naat giskal la biibbi xxx tuuppa khuuntsili
inidhe casgal la bibh 30 taobh caondualach
bowels of ship with it are 30 beams carved.
29. kiissariissi Irsaappa khalu
coisrighim Irsapa geillim
consecrated Irsapa worship (serve).
30. ensukha tsiliya guskin kilalbi tu
aon suacan teallach cioscain geallaim tu
one pot earthen tribute promised thou.
31. xx mana guskin iii kak si iii kak pirkar
20 mana cioscain 3 ceis seic 3 ceis brucur
20 manehs tribute 3 cases ivory 3 cases sponges.

32. iii kak khuuzzi viii kak khusiittiin
3 ceis cuach 8 ceis coiseideadh
3 cases bowls 8 cases gaiters.
33. c kak anna iv dukan c kak khaab
100 ceis ainne 4 tuighean 100 ceis ciob
100 cases rings 4 robes 100 cases tow.
34. c kak sir tsilliya assa
100 ceis sior teallach ase
100 cases long earthen shingles.
35. iv tak kukupu nata v tak kukupu
4 teigh cuachaim natach 5 teigh cuachaim
4 coverings of plaited hair grey 5 coverings plaited.
36. sa kur taba iii tibu xxiv khir gis pana
sa càor dubh 3 dabh 24 cear ceis bheanan
in sheep black 3 cows 24 carcasses pigs female.
37. x gisguza sa giskal istu Sadibbi
10 ceis ceos sa casgal aiste Sadibbi
10 pig hams in vessels out of Sadibbi.
38. x salkhuuz ii giskal tsiliya
10 sail ceos 2 casgal teallach
10 salt hams 2 vessels earthen.

I subjoin Dr. MacNish's free translation of this valuable epistle: "I would place at thy disposal my good lands, my good peoples, my excellent generals, my good and brave warriors among my valiant men, and my good horses. I am, I am sending my faithful messengers to thee, as far as thine abode. I would confer a favour upon thee, in order that by means of them (my messengers) I could gain favour for thy beloved. My colleague Khalugari, the prince over Irsapa, inclines to me to gain Akh, thy princess, for my wife. The people refuse to incline to Akh, and to follow her bidding in the army. The colleague, your body-guard places an earthen pot of tribute (gold) at your disposal—the colleague who takes Akh of the land from thee to be his wife, asking thy offspring who you are. I have grief in telling your highness that there is enmity to thee; forasmuch as thou askest of Khalugari, the prince in command, to refuse the daughter of the kingdom. Khalugari, the prince, makes a request through enmity, though he denies the necessity of doing so. He refuses to do thy bidding, secretly refusing permission to her, to thy princess. I make Khalugari hear. Khalugari, the prince, to obey the daughter of the land, stirs up the quiet assembly that

inclined to thee by forcing the warlike tribes of Matya from thee dissolving their obligation to thee."

"There is a Hittite ship going from Igaid. In the hold of the ship are thirty beams (gods) carved and consecrated, to which Irzapa does homage. There is one earthen pot of tribute (gold) which I promised to thee. There are 20 manehs of tribute (gold), 3 cases of ivory, 3 cases of sponges, 3 cases of bowls, 8 cases of gaiters, 100 cases of rings, 4 robes, 100 cases of tow, 100 cases of long earthen shingles, 4 coverings of plaited grey hair, 5 plaited coverings made of the wool of black sheep, 3 cows, 24 carcasses of female pigs, 10 pig hams in vessels out of Sadibbi, 10 salt hams, 2 earthen vessels."

I do not propose to follow Dr. MacNish in his vindication of the Gaelic of the epistle, which those who are curious can find in the Transactions of the Celtic Society of Montreal. The high reputation of my learned colleague as a Celtic scholar, second to few, if indeed to any, in the world, is sufficient guarantee for the correctness of his translation, with which I have not interfered in the slightest. The task I propose is to place this intensely interesting document in its historical setting by the aid chiefly of monumental evidence. There is no necessity for any research for the purpose of determining who Nimutriya, the Pharaoh to whom it is addressed, was; since all authorities agree that he was Amenhotep III., whose son Amenhotep IV. Khu-en-aten, left Thebes for Tell-el-Amarna, in consequence of his founding a new religion. A princess intimately related to Amenhotep, or Nimutriya, forms the chief subject of Tarkhundara's letter, and her name in its Celtic dress was Akh. Amenhotep III. had no such daughter, but one of his granddaughters, through his son Amenhotep IV. of Tell-el-Amarna, was Ankh, called more fully Ankh-nes-pa-aten. Here, in all likelihood, appears the first clue to the historical connection. On some of his monuments, according to Lenormant, her father is represented in his war chariot followed to battle by his seven daughters, a testimony to their Amazonian character.

Ankh the princess married Tutankh or Tutankh-Amen, who by this alliance became a Pharaoh, and reigned in the legitimate capital, Thebes. Brugsch thinks his reign was a short one, though marked by much development in the arts. In external form Tutankh has nothing in common with either Tarkhundara or Khalugari. We may turn, therefore, in the meantime to the geographical name Irzapa. Dr. Sayce supposes this to be a Syrian Razappa or Resheph, because a land of Igadai, which he takes to be the same as the Igaid of the inscription, is, in the Egyptian Travels of a Mohar in Palestine, placed to the north of Aleppo.

I do not believe there is any sufficient evidence to prove that the Mohar was near Aleppo, but this is beside the subject. In the sequel to his *Early History of Babylonia*, George Smith mentions an Agade near Sippara on the Euphrates, and, further down the river, below Babylon, was Borsippa, a place of great note and high antiquity which gave name to the surrounding country. Even so late again as the time of the geographer Strabo, the chief tribes of Chaldean astrologers were those of the Borsippeni and the Orcheni. It is more natural to suppose that Irzapa is a Celtic form of Borsippa than to look for it as an obscure Syrian district, since its ruler sought in marriage the daughter of a powerful Pharaoh. The voyage of the Hittite ship from the Persian Gulf to Cosseir, the port of Thebes, or to some similar port on the Red Sea, would necessarily be a long and adventurous one, but as there was much commercial interchange between Babylonia and Egypt, it was probably the more common route for it, since deserts and hostile tribes placed difficulties in the way of land transport. The identification of Irzapa with Borsippa is, however, only tentative.

Among all the Babylonian monarchs of note, the only one whose name approaches that of the Egyptian Tutankh is Dungi. Two cities were named after him, *Dunnu-saidu* and *Bil-dungi-ur*. He is mentioned in four of his own inscriptions, two of which are votive, on a signet cylinder and on a stone weight of his own time, and is referred to by Nabonidus of the sixth century B.C. as the completer of the tower at Ur, which had been begun by his father. More important by far than Dungi was his father, the remains of whose buildings exceed those of every other Chaldean monarch except Nebuchadnezzar. His name has been variously rendered as *Uruk* and as *Urhammu*, and Lenormant, who gives him the latter, identifies him with the *Orchamus* of Ovid, quoting the verses:

“Rexit Achaemenias urbes pater Orchamus isque,
Septimus a prisci numeratur origine Beli.”

He and Dungi his son called themselves kings of Ur (now *Mugheir*) and kings of *Sumir* and *Accad*, two distinct peoples. *Uruk* or *Urhammu* built at Ur, *Larsa*, *Erech*, *Nipur*, and *Zirgulla*, therefore over all the region called *Orchoene* by the classical geographers, a region lying south of Borsippa. The forms of his name, *Urhammu*, *Orchamus*, *Orchoene*, suggest a Cymric *Urgan* or *Morgan*, or a Gaelic *Breogan*, head of the *Brigantes*, as well as a Midianite *Rakem* or *Rekem*. The facts that the Welsh *Urgan* and *Morgan* denote the same person, and that the Hebrew *rekem*, variegated, is the Gaelic *breacaim*, I variegated, indicate that modifying prefixes had, as they still have, a large function in Celtic

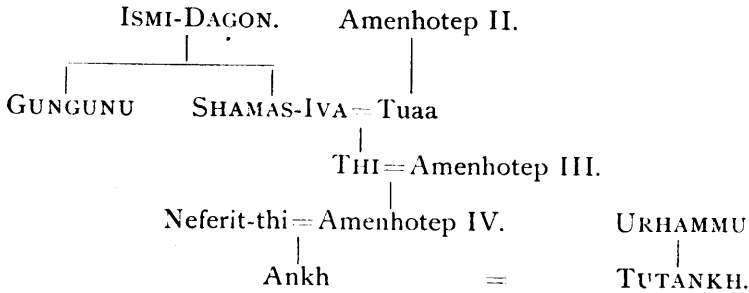
speech. Such a prefix is the letter *t* which O'Reilly, in his Irish Dictionary, says "is used as an adventitious prefix to all Irish words beginning with a vowel, which are of the masculine gender, and are preceded by the article *an*, which signifies *the*." By this process, Urhammu or Orchamus became Turhammu, Torchamus, Tarkhun.

Tarkhun is not Tarkhundara, but it explains it, even as the dynastic title of Dungi or Tutankh, for *dara* is a good Gaelic word meaning "the second." Tarkhun-dara is thus an original Tarquinius Secundus. That the legendary story of the two Tarquins was transmitted from the banks of the Euphrates to those of the Tiber can hardly admit of doubt. By a sudden revolution, the cause of which is hinted at in the epistle, Dungi or Tarkhun-dara was driven from Ur, and took refuge not in the Campanian city of Cumae but in Chemi, the land of Egypt. He belongs obscurely to Greek legendary history as a Thersander who never saw Greece, and whose genealogy is all astray, save when Thrasyanor is made his grandfather, but who is rightly made the husband of a daughter of Amphiaras, for the original of this priestly monarch was Amenhotep IV., called in cuneiform script Naphurkuriya. Final *der* and *tor* in ancient royal names supposed to be Greek must be regarded with suspicion: as a matter of fact, Thersander and Amyntor are Celtic dynastic titles. Once more Tarkhun-dara, Dungi or Tutankh, appears in Greek mythology. As Tarkhundara married Akh, and Tutankh the Egyptian Ankh, so Tithonus was the husband of Eos, who bore to him the Egyptian Aemathion and Memnon. She is called the daughter of Hyperion and Theia, a statement mingling truth and error, for Hyperion, the solar deity, is but a form of Naphurkuriya, the name of her sun-worshipping father, and Theia is her grandmother Thi, the Celtic spouse of Amenhotep III.

Many ancient writers, from Homer and Hesiod onwards, make mention of her son Memnon, who has no place in the Egyptian dynasties. His double connection with Egypt and Ethiopia, and with Susa, where his father Tithonus is said to have reigned as the viceroy of the Assyrian king Teutamas, shews that the birth of Tutankh in the Euphratean region was well known, and that he was connected with the Thothmes, not of Assyria but of Egypt, who were closely related to the Amenhoteps, although, by an error of judgment on the part of most Egyptologists, Amenhotep III. and IV. are set down later than all the four Thothmes. Tithonus is generally called a son of Laomedon of Troy, but Apollodorus makes him the son of Cephalus and the father of Phaethon. The original Troy, whether Homer knew it or not, lay between Babylonia and Egypt, and thither Memnon is said to have come from the banks of the

Euphrates to help Priam and the men of Ilium. While Cephalus, the name of the father of Tithonus, is but Hyperion and Amphiarus, his father-in-law over again, Laomedon and Phaethon are one. Ulam-Buryas was a Babylonian king and a cousin of Uruk or Urhammu. His son Ulam-Bedan, or in Celtic and Semitic as opposed to Turanian order, Padan-Ulam, was at once the Laomedon and the Phaethon of the Greeks. Bedan or Padan, the ancestor of the Patinians, and at the same time the original of the British Bladud or Badud, who built Caer-Badus or Bath, and, like Phaethon, attempted to fly to heaven, was the second cousin of Tarkhundara, Dungi, or Tutankh. As Tithonus, the latter is the German Tannhäuser imprisoned in the Horselberg, and True Thomas in the coverts of Ercildoune, as Sir George Cox has demonstrated, but, in Geoffrey of Monmouth, he is also Caradoc's brother Dianotus, king of Cornwall, whose all attractive daughter Ursula invites comparison with the Horselberg and Ercildoune. Thus world-wide was the fame of the really Cymric or Sumerian, but Gaelic writing, Tarkhun-dara.

The marriage of Akh with Tarkhun-dara was far from being the first alliance between the Babylonian and Palestinian Celts and the Pharaohs. Thi, the wife of Amenhotep III. and mother of Amenhotep IV., was a relative of Tushratta, king of the Mitanni or Midianites who dwelt between the Euphrates and the Jordan. When on a hunting expedition in his country, the Egyptian monarch met her and made her his queen. The monuments represent her "with light hair, blue eyes, and rosy cheeks, like the women of northern climates." Her name, in the form Tea, occurs more than once in ancient Irish history, and she was the original Greek Theia. Her mother was Tuua, daughter of Amenhotep II., and her father is called Iuau. This peculiar Egyptian dress hardly conceals a Celtic Hugh, which appears among Mitannian or Midianite names as Eui or Evi. Here again we have to deal with no obscure man. A son of the second cousin of Tushratta (who, by the way, was no less a person than the Greek Adrastus), he was the Iva or Shamas-Iva, who, with his father Ismi-Dagon and his brother Gungunu, not only ruled over the greater part of Babylonia, but brought Assyria also under their sceptre. They likewise called themselves kings of Sumir and Accad, and asserted sovereignty over Ur as well. These proud Babylonian monarchs, whose alliance the Pharaohs eagerly sought, must have been those whom Berosus comprised in his Median dynasty, the name Median being then, as it probably was later, synonymous with Midianite. In the sixteenth century B.C. they were almost supreme. The following table, in which the Celtic members are printed in capitals, indicates their important position :



Other tablets from Tell-el-Amarna furnish the names of four Mitanian kings or chiefs in three generations, the last of which was contemporary with the Amenhoteps III. and IV. These are Tushratta and his brother Artassamara, their father Satarna, and their grandfather Artatama. Of these, Satarna connects with ancient Irish history in the person of Stairn, called the son of Nemedius or Midian. This he was not, but he must have been very nearly related to Ephah or Gephah, Midian's eldest son. A son of this Gephah heads a Pharaonic dynasty older than that of Tutankh. He is Senta, who is found at the end of the second dynasty, and his real successors are Menkau-Hor, Tatkara, and Assa of the fifth, although Egyptologists erroneously place six hundred years between them, and represent Tatkara and Assa as one person. That other Pharaohs were of the same Celtic stock is very probable, but evidence to prove it is yet lacking. Proceeding, for lack of a better, upon the chronology of the Hebrew Scriptures, the date of Senta's monarchy in Thinis or in Elephantine may be placed between 1800 and 1750 B.C., instead of in 4000 B.C., as fixed by Lieblein. The period of Tutankh, the last purely Celtic Pharaoh, was not far from 1580. The two centuries that lie between the extreme dates represent the Golden Age of the Celt, the time when his mythology and legendary history were formed. Fingal and Ossian, Aneurin and Taliesin never saw the British Islands, but somewhere between the Tigris and the Nile performed the deeds and sang the songs of the days of old, when Shamas-Iva or the Egyptian Iuau was a man whom their descendants converted into Hu, the sun-god.

There were other Celts ruling in Chaldea besides the dynasties headed by Ismi-dagon and Urhammu. I have already mentioned that of Ulam-Buryas and his successors. Closely related to it, although Celtic only on the mother's side, was that of the Kurigalzus and Burna-Buryases, who were Ossianic Trathalls and Brians, half Hittite and half Cymric, although the Hercules like Kurigalzu left his name to Argyll. Of the same stock was Khalugari of the tablet, for he was a late Colgar, named after the brother of Cumhal and Brian, if indeed he were not the

same man. Also the brother of the Egyptian Menka-Hor, son of Senta, was Singasit, called the son of the lady Belat-Sunat, who ruled in Chaldea at Urukh or Warka. A Welsh Mabinogi mentions his mother as Bleiddan Sannt of Glamorgan; but, *mirabile dictu*, he is no other than the Hengist of British story, and his Egyptian brother is its Horsa, no Saxons at all, but most genuine Gaels. To Vortigern and Vortimer they were foreigners, however, for these monarchs were of Hittite race.

The Egyptian monuments have preserved for us the names of four Hittite army leaders who are as Celtic as any of the foregoing worthies. Brugsch calls the first of these, who was a son of Ulam-Buryas and thus a cousin of Tutankh, by the varying names Sapalili, Saplel, Saprer. An Assyrian form of the same Patinian name was Sapal-Ulme, and its Hebrew equivalent was Achbor-Ulam, in Ossianic language Cairbar of Ullin. His son Mauro-sar was the original of the Greek Meleager, famous in the story of the Calydonian boar, which received its geographical name from Zimran's son, the ancestral Gilead. And his son Mauthanar, by simple inversion of the parts of his name and a common dental change, becomes Near-mada or Diarmaid, the hero of the Irish boar hunt and the supposed mythical ancestor of all the Campbells. After his death his brother Khetasar made peace with the great Rameses and gave him his daughter in marriage. Who stands for Khetasar in Celtic tradition I have not yet found, but, in Herodotus and elsewhere among Greek writers, he is Cytissorus, the last of the dynasty of Phrixus, which Phrixus was Buryas or Peresh, the son of Gilead, and father of Ulam and Rakem.

The list of distinguished Celts of monumental antiquity which I have furnished is far from exhaustive. It comprises five Pharaohs only, and these by no means the greatest. The great Egyptian monarchs were Hittites, with the exception of the Thothmes-Rameses, who were of Horite or Phoenician descent. But the Celtic Pharaohs were very religious, from the divine Senta down to Prince Ptahhotep, the son of Assa, who wrote a book of moral precepts. The latter was a Welsh Eudav, Latinized by monkish chroniclers into an Octavius. He, however, was not the Eudav who gave his daughter in marriage to Maxen Wledig. That Eudav was Iuau or Shamas-Iva, whose daughter Thi married Nimutriya or Amenhotep III., a Hittite Pharaoh of the Kenezite line to which Caleb the son of Jephunneh belonged. His Hittite name was Meonothai or Megothai, and he is at once the Maxen and the Manawyddan of Welsh tradition. What the Celt lacked in Egypt he made up for in Babylonia and even in Assyria. There the Cymro or Sumirian came first, and the Accadian or Hittite second. Look up the twentieth cut in George Smith's Chaldean

Account of Genesis, entitled "Migration of Eastern Tribes from early Babylonian Cylinder," and in the central figure you will find a typical bearded Gael in kilt and plaid and bonnet. The Celt was dominant on the Euphrates and the Tigris. The haughty Hittite Sargons and Hamurabis had to make Sumirian alliances or perish. Ismi-dagon, the great conqueror of Assyria, with his sons Gungunu and Shamas-Iva, attained imperial power, while their relatives Satarna and his son Tushratta dominated Mesopotamia and Syria, and the dynasties of Buryas, Singasit, and Urhammu ruled Chaldea. In Canaan itself the Hittite Confederacy was fain to call in the aid of Celtic skill and courage, and virtually make kings of the Saprers, Maurosars, and Mauthanars, who fought their battles against all the might of Egypt.

To the student of ancient history the story of the primitive Celt is invaluable. It cuts down the fabulous antiquity of the Egyptian and Babylonian conjectural historians; it reveals the contemporaneity of monarchs falsely separated by centuries; it discloses the identity of Egyptian Pharaohs, such as the Thothmes and Rameses, placed far apart in different dynasties; and it withdraws so called myth from the realm of mystery into that of perverted history. The Celt was a half-breed, but of the noblest kind. His father was the Semitic Abraham, his mother, the Perizzite princess Keturah of the purest Aryan race. Zimrite and Midianite, Sumirian and Mitannian were the names by which he was known, names that he rarely disgraced. Like the Hittite, he fell upon evil days when the Horite or Phoenician Thothmes-Rameses became supreme in Egypt, and when Israel at a later date scattered his squadrons; but, when the Aryan first reasserted himself, it was in his Medo-Persian person, and that new supremacy the Aryan keeps to-day, through all the Latin nations and even in many that are Germanized and Slavized, through the inborn vigour of the Celt.

A great difficulty in the way of recognizing the historical characters of the monuments in ancient Celtic history is the fact that much of that history was originally composed from a non-Celtic or Turanian standpoint, and doubtless in a Turanian language of the Iberic or Pictish division. In British tradition, the illustrious names of Arthur, son of Uther Pendragon, and of Emrys Wledig, or Aurelius Ambrosius, denote genuine historical personages but Turanians, and the same is true of the Irish Gadel, Heber Scot, and Milesius, and of the Ossianic Treinmore, Gaul MacMorn, and Cormac. Even the sons of Treinmore's celebrated son, Trathall, were only Celtic on the side of their mother, who was a sister of the Babylonian Urhammu and Ulam-Buryas. On the male side they were descended from the famous Sargon of Agade, who was the father of Trein the Great, known as Harum or Naram on Sinaitic

and Chaldean monuments. Yet it is more than likely that Brian, Cumhal and Colgar spoke their mother's Celtic language, although so far the name of the latter only, as Khalugari, appears in a Celtic document. There are Chaldean inscriptions of his brothers, who are called Burna-Buryas and Bel-Samu, of which latter Cum-hal is an inversion. They connect locally with Zirgulla and dynastically with Kurigalzu, who is Trathall. The Celtic army leader of the Hittite confederacy, whom the Egyptians called Saprer, has a fragmentary Babylonian record now in the British Museum in which he is termed Isbi-barra, king of Karrak. There may have been a Karrak in Chaldea, but his city was Kerak, in what afterwards became the land of Moab, and near it, towards the Dead Sea, not in any part of then unknown Asia Minor, lay the Ilium which Tarkhundara's son Memnon came to help when besieged by Agamemnon or Shimon, the valiant nephew of Rameses the Great. Classical writers say that Isbi-barra's grandson Mauthenar, whom they call Antenor, deserted his country in her hour of need and fled to Italy, but universal Celtic tradition, whether it call him Morvid or Diarmaid, represents him as perishing in a desperate but unequal contest with a huge monster, a trope, perhaps, for the giant power of Egypt.

As illustrating the vitality of ancient tradition, and at the same time its corruptions in the process of transmission, it is worth while comparing the lists of the sons of this great commander or generalissimo of the Hittites as preserved by the classical and Celtic historians. Antenor is said to have had nineteen sons, but the Iliad celebrates only seven. Geoffrey of Monmouth gives Morvid five; and I have succeeded in finding no more than three sons of Diarmaid, to whose number I add the names of two of his grandsons, Blathmac and Maolodhar. Leaving out Acamas, son of Antenor, who has no parallel in the other genealogies, there remain six classical names to compare with two Celtic groups of five each. It is to be remembered that a Greek Agenor is the same as a Sanscrit Agni, the *or* being an unnecessary increment, that r and l are interchangeable as are b and m, and that any radical diversity in an initial consonant may in some cases be explained as the result of prefixes, the original significance of which is now lost. Thus a son of Bellerophon is called Isandros and Pisandros, and the wife of Telamon bears the names Eriboia and Periboia.

SONS OF ANTENOR OR MAUTHENAR :

Archilochus Polydamas Polybus Agenor Helicaon Laodocus.

SONS OF MORVID OR NAR-MAUTH :

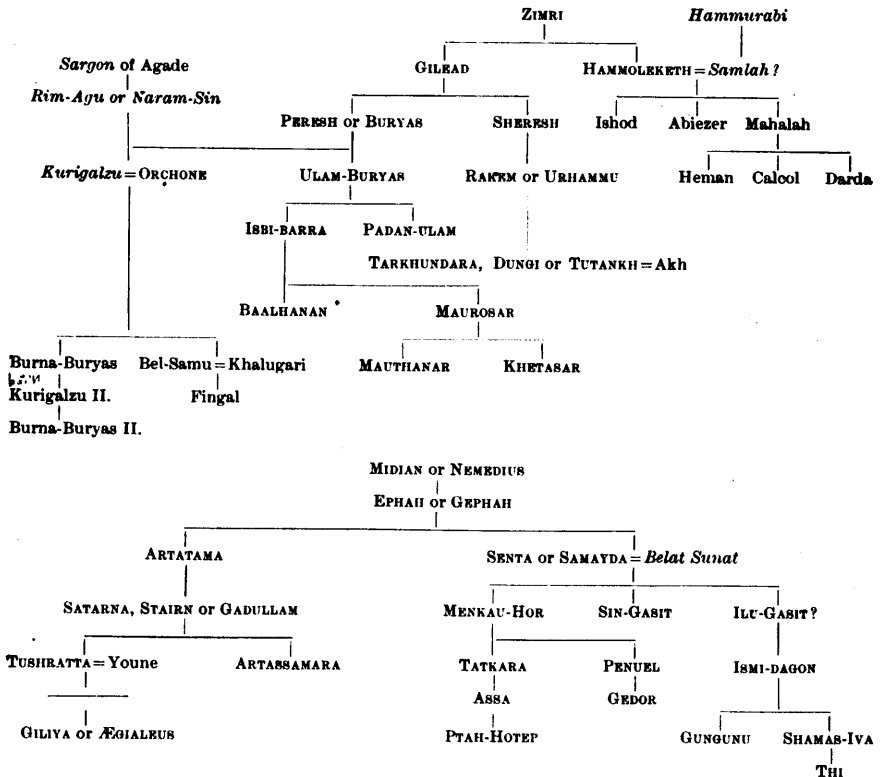
Arthgallo Peredure Gorbonian Vigen — Elidure.

SONS AND GRANDSONS OF DIARMAID OR NAR-MAUTH :

Breasal Blathmac Colman-beag — Hugh-slaine Maolodhar.

No monument so far discovered contains these names, but, when the Turk is out of the way and a strong government keeps the Bedouin in check, valuable relics of ancient Celtic life may be looked for in the excavation of Kerak and neighbouring sites in the historic land of Moab, which witnessed the slaughter in cold blood of a hundred thousand Gaelic mothers and their male children at the command of Israel's great law-giver, Moses. In the battle which preceded that massacre, five kings of Midian were slain, Evi, Rekem, Zur, Hur and Reba. This terrible defeat and massacre put an end to the Golden Age of the Celt, and his subsequent overthrow by Gideon, two centuries later, effectually checked his career of conquest.

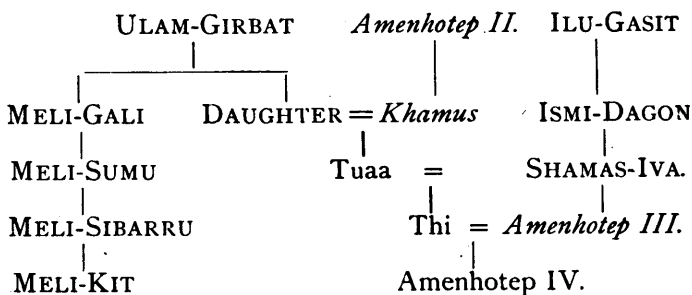
The subjoined genealogical table gives the names of the great leaders of the ancient Celts, in the Cymric and Nemedian lines, in capitals, the half-castes in ordinary text, and their purely Hittite ancestors in italics :



It is evident that the generations were of very unequal length, since Thi, who is in the seventh Mitannian, was the grandmother of Akh, who married Tarkhundara in the fifth Zimrite or Sumerian proper. A reconciliation may be found in the long reign of Urhammu, and in the

Tithonus and allied traditions which represent Akh's husband as an old man.

Since the foregoing was written, I have discovered a series of Babylonian kings of Celtic birth, pertaining to what is called the Kassite Dynasty. The first of these is Ulam-Girbat, or, more properly, Girbat-Ulam. He, like Tushratta and Artassamara, was a son of Satarna, but acquired the name Ulam by marriage into the family of the Cymric Ulam-Buryas. In the Tell-el-Amarna Semitic letters he is called Rib-addu, and his son Meli-Gali is termed Malchiel. The successor of Meli-Gali was Meli-Sumu, a Celtic Mail-gun or Malcolm, and his was Meli-Sibarru, a Mulciber, followed by Meli-Kit. In classical mythology, Girbat is no less a personage than Sarpedon, the son of Asterius and Europa, Asterius being his father Satarna, and his brother Artassamara being Rhadamanthus. The daughter of Girbat married Khamus, the son of Amenhotep II., of Egypt, and the offspring of this union was Tuaa, the wife of Shamas-Iva, and mother of Thi.



THE SEASONS, HUDSON'S STRAIT.

BY F. F. PAYNE.

[*Read 28th March, 1896.*]

With the object of testing the feasibility of a much talked of steamship route from certain Hudson's Bay ports to Europe *via* Hudson's Strait, in 1884 an expedition was equipped by the Dominion Government and dispatched to these waters with instructions to establish observing stations at several prominent points along the route, where the movements of the ice, the direction of currents, and the rise and fall of tides could be noted; also with the object of collecting full information bearing upon the climatology of the neighbouring shores. These stations were seven in number, five of which were in Hudson's Strait, and the observations, begun in the autumn of 1884, were continued uninterruptedly to the autumn of 1886, the reports of the observers, containing much valuable data, being published in the blue-books of the Department of Marine and Fisheries.

Although the Eskimo informed me that, with the exception of the summer of 1884, which was unusually cold, the seasons during which the stations were maintained were normal, it is quite possible that had the meteorological observations been continued for a much longer period the averages deduced from them might have shewn a slight difference from those found; on the other hand, however, when considered with the growth of plant life and other terrestrial changes, of which the Eskimo are keen observers and volunteered much information, a very fair approximation of the weather obtaining during the seasons can be arrived at.

If a native of the tropics, and one say of Florida, and another of Ontario, were transported for a year to Hudson's Strait, their verdict as to its seasons would doubtless be very different. The former would probably say, winter, everlasting winter, while the second might admit that at least there was summer and winter, but I think the last after due consideration would agree with me that in Hudson's Strait, as in Ontario, we have the four seasons, though in a very much modified form; for who, after long watching, when he sees the first flowers, the arrival of the first birds and other emblems of spring, will say there is no spring? Who, too, will say, when seeds are ripening and the bee goes.

humming by as he basks in the sunshine, and the birds are seen teaching their young, this is not summer? And when the leaves are changing colour, the seeds from their pods are falling, and the birds are hurrying southward, surely this must be autumn? These then and many other scenes indicative of the seasons were noted, and we shall now endeavour to describe them under Spring, Summer, Autumn, Winter.

Spring.—Probably the first sign of approaching spring is the change that takes place in the colour of the many coloured lichens which cover the rocks, and although the temperature is below zero every day, this is distinctly seen in March, the green coloured species becoming much brighter under the quickening influence of the sun. This, however, is a long way from spring, but it is hailed with joy by the Eskimo, as they also hailed the first snowbird on April 1st, when the average temperature was still below zero; and later still, on May 3rd, the full-grown caterpillars seen crawling upon the rocks when the temperature was ten degrees below freezing. These larvæ were evidently quite accustomed to frost, and although becoming stiff and hard when frozen, they were soon quite lively when allowed to thaw. A few specimens were kept in hopes they would in time change to the moth or butterfly state, but every one of them was infested with a parasite, and instead of their pupæ bringing forth butterflies they were found to be only aids to the metamorphosis of a common fly, three or four of which, looking somewhat ashamed, escaping from each carcass and flying away.

From May 1st to 15th the temperature, though occasionally rising above the freezing point, was still below the average, and excepting the willow, which creeps for protection under the moss, throwing shoots out only a few inches above, on which the buds were now much swollen, there was little sign of life. On May 13th, the temperature being about 38°, a number of flies were seen; this, however, was followed by some cold days, and it was not until May 20th that any distinct sign of spring was noticed. At about this date there was a marked rise in temperature and immediately everything sprang into life, no less than thirteen different species of plants showing distinct leaf-buds five or six days later, including *Antennaria alpina*, *Ledum palustre*, *Diapensia Lapponica* and others. These of course are of the more hardy plants and were not much affected by frost or the snow which continued to fall in 1886 up to June 17th. On May 29th of the same year the depth of snow on the ground was estimated at seven inches, and although often added to it was quickly melted, and this estimate included many drifts twenty feet deep or more, while over large level areas exposed to the sun there was little or no snow. Simultaneously with this sudden start in plant life a

number of birds varied and almost immediately were seen mating. These included the shore lark, water thrush, stone chat, rough-legged buzzard and others; the only insects to be seen, however, on the last day of May were a few spiders and flies.

Turning our attention seaward we see a very different scene from that presented on shore. Throughout the month of May the ice, now somewhat honeycombed and much broken outside the smaller bays, is floating back and forth under the influence of the winds and tides, sometimes leaving a belt of open water round the shore several miles in width, and then, with a change of wind, returning in a compact mass, the pans being from a few feet to several acres in area. Upon this ice may often be seen great masses of stone, gravel, seaweed and plenty of dead vegetable matter, and when met with far out upon the Atlantic this appears as an extraordinary phenomenon; a short stay on shore, however, soon dispels this wonder, for here we see the crumbling cliffs in springtime letting loose huge pieces of rock upon the ice below, the winds and rivulets depositing loose shrubs and moss, and the rising tides overturning great blocks of ice with stones and seaweed adhering.

From the end of May to about the middle of June is a very short period, and yet we see some marked changes in vegetation. The snow, with the exception of a few deep drifts that will never melt completely, has now nearly gone, and although a fresh fall often occurs, and the temperature still occasionally falls to the freezing point, it has reached as high as 45° and has averaged about 37° , the sky being overcast for nearly two-thirds of this period. On June 15th twenty or more different plants were in leaf and two were in full bloom; the snowbird, ducks and gulls were nesting, and it is probable all the birds that migrate to these regions had arrived; the only insect seen, however, besides the spider and fly, was the bumble bee.

Up to this time the Eskimo have not been considered, having been noticed in a former paper. It may be of some interest to know, however, that a June sun also has its effect upon them, and the young lord of this sub-arctic wilderness may now be seen casting a meaning glance towards some dusky damsel, which is just as quickly returned and often with interest, for catching one of these lords means a more plentiful supply of food, and although it is done under the intoxicating influence of the season, it is quite legal.

Between June 15th and 30th there was a noticeable improvement in temperature at Cape Prince of Wales; light frosts occurred only twice, and once 60° was registered, the days being pleasant and the nights cool, while the average temperature was about 39° , the last snow of the season

falling on the 17th. During this period, vegetation, and in fact all animate life appeared to make wonderful growth, twenty of the sixty-five different plants collected being in full bloom by the end of the month, and many birds had now settled down to their work of incubation. The small lakes, too, were just open, and the loon with its melancholy call could be seen industriously diving for fish, and on the last day of June two different butterflies were taken. Over the sea the ice, though much softer, has remained generally compact, but along the shore and in the small bays it is fast giving way. At the eastern and western entrances of the Strait the average temperature for June, which is about 32° , is apparently slightly in excess of that in the central part, owing, doubtless, to the contiguity of the warmer waters of the Atlantic and Hudson's Bay, and it is about 30° less than the average at Toronto.

Summer.—The first day of July may be considered the first day of summer, and taking a survey of the month on the last day, some interesting changes can be recorded. The temperature has fallen to the freezing point on four or five days, but the frost has not been sufficient to endanger vegetation, while it has often risen to between 50° and 60° , the highest recorded being 68° on the 18th day, this being the maximum for the month and year, and 31° the minimum for the month only. The sun for some time has been rising in the N.N.E. between 2 and 3 A.M., and setting in the N.N.W. between 9 and 10 P.M., and the sky presents the same appearance during the intervening night hours that it usually does in lower latitudes just before sunrise, often glowing red and bright golden. At all hours it is as light as it is in Ontario immediately after sunset, this being an important factor in considering the navigability of the Strait.

By the middle of July all the plants excepting two, *Matricaria inodora* and *Ranunculus hyperboreus*, which were in bloom on the 28th, had bloomed, and now, wherever there was sufficient earth to support plant life, purple, blue, yellow and white flowers were to be seen in profusion.

Early in June, by way of an experiment, some garden seeds were sown, and on the 22nd of that month I find the following note in my journal: "Of the peas, turnips and spinach sown in open ground the two former are thriving whilst the latter does not seem inclined to grow, a few seeds only having germinated. Of spinach and garden cress sown under glass, the former is doing well whilst the latter, though half an inch in height, is withering." On July 7th there is also this note: "The peas, turnips, spinach and cress have made no perceptible growth since June 22nd." Excepting the cress which grew a little after this date there was no perceptible growth, and towards the end of the month all the plants withered.

During July, 1886, the prevailing winds being N.E. in the western entrance of the Strait and E. elsewhere, doubtless much ice drifted into Hudson's Bay, and was there melted. These winds, which probably often inclined to northward, tend to pack the ice on the south side of the Strait, leaving periodically wide stretches of open water on the north side, and this is doubtless of frequent occurrence at this time of the year, as ships entering Hudson's Bay always keep to the north side of the Strait. Although these ships are often caught and held fast in the pack for a short time, upon the ice becoming loose they are again able to move on. The sun by July 20th being quite warm and the temperature of the water increasing, the ice is much honeycombed, and upon the ice-pans may everywhere be found pools of perfectly fresh water from which passing ships take their supply. By the middle of July all the small bays were open, and once more, when they were not packed with drifting ice, as often occurred, the welcome sound of waves could be heard breaking upon the shore. By July 22nd, 1886, all the ice had become generally very open, and although often packing tightly with a strong wind and probably an opposing tide, it would soon open again, and fifteen days later there was little to be seen at Cape Prince of Wales, while elsewhere the remaining ice was widely scattered.

Returning again to the land on July 15th we find the young of four or five different birds already fledged, including the snow bunting and shore lark; the fox, hare and lemming have assumed their summer garb; salmon and trout have been for several days ascending the streams to their spawning beds, and all are enjoying the warm sun to the full. Upon the shore in the little pools of water and among the seaweed left by the receding tide a variety of marine life may be found, including several kinds of fish, *muscles*, clams, shrimps, anemones and large jelly fish. None of the fishes, however, show as much vitality as those of the same species in lower latitudes, and most of them were very easily caught with the hand. The Eskimo at last look happy, and as seals and the white whale are plentiful they are all quickly growing stout and lazy, spending much of their time basking in the sun. Insect life is now at its extreme height and includes several different kinds of butterflies, of which the *colias* are the most numerous, moths, bees and mosquitoes, the latter being about as numerous as the sands of the shore. Fortunately these pests only become troublesome on warm days and then only in the sunlight, being delightfully quiet after the sun goes down. Upon cold cloudy days the bumble bee only would be seen on the wing.

On July 30th, at Stupart's Bay, or Cape Prince of Wales, the ground was found to be frozen at a depth of 48 inches, this probably exceeding

somewhat the depth at the western entrance of the Strait, as frozen ground was there found at a depth of 27 inches on July 17th, both measurements being in sand well drained and well exposed to the sun.

The average temperature for July at several points does not differ much, being about 40° in the western end of the Strait and 42° elsewhere, this being about 26° less than the average in Toronto. Fogs are very much more frequent in July than at any other time of the year, a total of 147 hours or about six whole days being recorded in 1896 at Cape Prince of Wales. These fogs, however, do not very often extend to the land, being confined mostly to the Strait where the warm winds from the land are quickly cooled to the dew point by contact with the ice. The number of hours of fog in the whole year 1885-86 was 606, against 1992 hours in the Straits of Belle Isle. The rainfall for the month of July was very small, being only .39 inch, or 2.61 inches less than the average in Toronto, and although a greater rainfall was recorded at other parts of the Strait, it was everywhere considerably less than the Toronto average. Thunderstorms evidently seldom occur, only two being noted during the year 1886. The average amount of cloud is considerably less in the winter and more in the summer than in Toronto, where the average for the year is slightly in excess.

From the 1st to about August 25th, when summer may be considered as over, there is not apparently much increase in the temperature; it is, however, far more steady, frosts becoming much less frequent and the range less; nevertheless cold cloudy days occur, when all insect life disappears as if by magic. The seeds of nearly all the plants collected ripened early in August, and excepting two, the seeds of which were not ripe until about September 5th, all had ripened by the last week in August. By about the middle of the month it is probable all the young of the birds breeding on the shores of the Strait were fledged, and a little later several had doubtless gone southward as they were not again seen.

The average temperature for August, 1896, was 43° , or 23° less than the average in Toronto. The direction of the wind was respectively between N. and W. at Cape Prince of Wales, S. and W. at Cape Chudleigh, and N. and E. at Nottingham Island. The rainfall generally was about .25 inches, or rather less than the average in Toronto, it being considerably less at Stupart's Bay.

The temperature of the sea averaging about 34° or 35° during the first fifteen days of August, much of the remaining ice is doubtless melted, and although the bays are often filled with drift, more especially in the western end of the Strait, there is not enough to affect the temperature of the air, and this is doubtless the principal cause of the small range on

land, making it the most enjoyable part of the year. By August 19th, 1896, all the ice in the Strait had disappeared, excepting an occasional small Fox Channel berg, which continued to pass slowly to the eastward until winter again set in. These bergs, being very deep in the water, are doubtless carried eastward by a steady undercurrent which apparently affects the surface ice but little, and is probably quite of secondary importance in considering the navigability of the Strait.

Upon several days in August when the the temperature rose to 60° or 65°, it was rather amusing to see the Eskimo thoroughly exhausted with the heat, the perspiration pouring down their faces, and presenting much the appearance of people in Ontario when the temperature is up in the nineties; they could not understand how we could appear so cool under the circumstances. These happy days for us when it was possible to sit watching the bright blue sea, the many sea-birds, the green valleys, dotted with flowers, and hear the busy bumble bee as it circled round two or three times and then went buzzing away, did not last long. By the 15th day nearly all insect life had passed away, and by about the 25th summer was over and autumn had begun.

Autumn.—The first sign of this season of decay and probably the saddest, is the drooping of the dying plants; in this region, however, it is soon all over. On August 20th two or three species had succumbed, ten days later a large number had assumed their autumnal tints and were withering, and by September 12th, nearly every plant noted had ceased to show life or was quickly withering. Nevertheless, in spite of frequent light frosts, the temperature often rose during this period to about 50°, although it was more often from 40° to 45° during the day and somewhat lower at night. The highest recorded in September, 1895 (to which year we have to refer from this onward), was 47°, and the lowest 5°, the average for the month being 33°, or 26° less than the average in Toronto. There was but little difference in temperature at other points in the Strait, Cape Chudleigh only being slightly higher.

On September 2nd wild geese were flying southward; on the 7th the ground was frozen; on the 14th snow fell, and a few days later there was ice on the small lakes a quarter of an inch in thickness; dates and observations agreeing with those at other points within two or three days. These uncomfortable signs of approaching winter, were only signs, however, for during the greater part of September there were many enjoyable days when the snow would completely disappear and the air would feel comparatively warm. The frosty mornings that now so often occurred had a stimulating effect upon the Eskimo, and those who had

been taking life easily during the summer were now doing their best to lay in a supply of provisions for the winter.

By September 25th autumn is quite over, excepting at the eastern entrance of the Strait, where it may possibly be delayed to the end of the month, although much hard frost will doubtless occur before that date, all lakes there being frozen over on the 26th. These last days of autumn are anything but pleasant, and to the Eskimo they are almost misery, for the snow being too soft to make winter igloos or houses they are compelled to reside in their seal-skin wigwams which cannot be sufficiently heated with their lamps.

Winter.—In entering upon the season of winter in sub-arctic regions how very different is the feeling to a new-comer from that which affects him on his arrival upon the scene in summer! If he has a boat he feels that by coasting long enough he may reach some traders' post, or should his provisions be exhausted or stolen by the starving natives he may shoot enough to support life. In the winter it is not so, for then even the Eskimo will not travel any great distance, all their long journeys being undertaken in early spring; and with numbers of half-starving natives following him everywhere and perpetually begging for food a feeling of helplessness takes hold of him that is often hard to shake off. As the season advances and the silence, so well known to travellers in these regions, increases, when nothing can be heard but the groaning and moaning of the great masses of ice under the influence of the ever-changing tides, one is more or less inspired with a feeling of awe to which he does not for some time become accustomed.

A few birds, such as hawks, snow-buntings, ducks, gulls and guillemots, lingered until the first week in October, the last being seen as late as the first week in November, and on occasional bright days early in October a few flies would be seen. With these exceptions, however, after September 1st there was little sign of life, most of the larger animals, such as the fox and wolverine, being still inland. Looking seaward at Cape Prince of Wales the prospect was brighter; here might still be seen the white whale, walrus and seals sporting in the blue water until quite late in October, when ice once more formed in the bays. This shore ice would often break up and drifting out to sea would help much to smooth the open water which on calm nights would also often freeze. A fresh wind then occurring all the ice would again be broken up, and it was not until large masses of Fox Channel ice had crowded into the bays about November 30th that the water in them became permanently frozen.

In 1884, in the western entrance of the Strait, there was much Fox Channel ice throughout the summer and autumn; elsewhere, however

there was little or none after August 25th. By October 2nd it had closed in upon Nottingham Island and soon after an eastward movement set in. Early in November it was visible at Cape Prince of Wales and continued to drift backwards and forwards, packing mostly on the north shore. At Cape Chudleigh some Davis Strait ice was doubtless driven in by the prevailing easterly wind, as it was generally compact by November 8th.

In 1885, when, according to the Eskimo, the season was normal, the ice was compact at Nottingham Island on Oct. 3rd, at Cape Prince of Wales on November 14th, and Cape Chudleigh on November 23rd. From these dates onward until about the end of December, 1885, the ice would often be quite open for a short period, the changes being apparently dependent altogether upon the wind and tides. After January 1st, until spring, it increased in compactness, and only occasionally when strong winds occurred would any open water be seen. In all cases the open water would very soon be frozen over, the ice thus formed being in turn broken up by the encroachment of the heavier ice upon it.

With the approach of winter the long nights appear, and daylight becomes very precious; on October 17th lamps were lit at 4.40 P.M., on November 20th at 3 P.M., and on December 21st at 1.30 P.M. Fortunately the moon does not treat these regions in the same way as the sun, and with the help of the aurora, which may be said to occur on at least four days in ten during this season, the long absence of daylight does not appear such a hardship as might be supposed.

Owing to the presence of the water of the Strait, the temperature does not fall so low as it would many miles inland to the southward, the lowest recorded during the winter of 1885-6 being -45° below zero, while -65° was registered at Fort Chimo, Ungava Bay; nevertheless, the average winter temperatures are unpleasantly low, more especially at the western entrance, where, in 1885-6, the means for the months December to March, inclusive, were respectively, -6.6 , -24.4 , -26.2 , -11.0 . At Cape Prince of Wales they were four or five degrees higher, and at Cape Chudleigh, the figures given for the same months are respectively, 4.8, -11.5 , -10.4 , -0.1 , showing a marked difference, this being doubtless owing to the contiguity of the Atlantic Ocean.

Blizzards occur rather frequently, and then it is impossible to face the wind without fur clothing; on the other hand there are many calms when the cold is felt but little, and as a rule ordinary woollen clothing was found sufficiently warm. During these blizzards the snow packs very hard and is easily cut into large bricks with which to build the Eskimo's house, and large areas of exposed ground are often left com-

pletely bare. The snowfall generally is much greater in the Strait than in Toronto.

On November 8th the ice on the lakes at Cape Prince of Wales was 20 inches in thickness, on December 14th it was 22 inches, on the 27th, 27 inches, and on April 17th following, it was $72\frac{1}{2}$ inches. On May 3rd, the sea ice in an almost land-locked bay, was 66 inches, this being the maximum of the year.

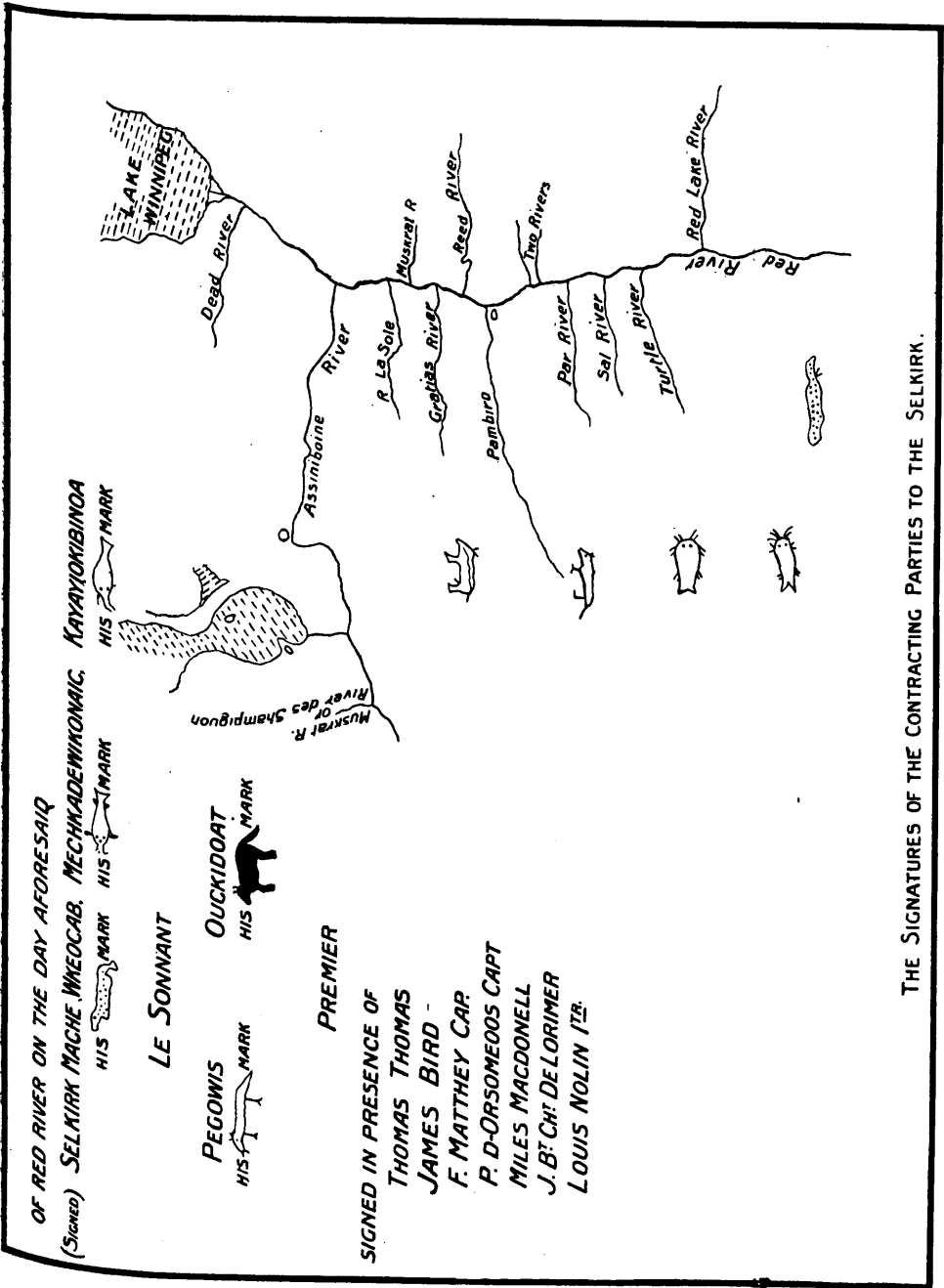
Much more might be added relative to the various climatic changes that take place during the winter and other seasons; it is to be hoped, however, this short description has at least conveyed some idea of the climate of a district that is undoubtedly destined to become of considerable importance to Canada.

PICTURE-WRITING OF THE BLACKFEET.

BY REV. JOHN MACLEAN, PH.D.

[Read 17th March, 1894.]

The natives of the American Continent preserved their legends and traditions through the agency of men who kept an accurate remembrance of them with important historical events by means of wampum records. A more permanent form, however, was needed for the recording of events and conveying them to others, which originated and developed the system of picture-writing. Etchings made upon rocks and trees, pictures painted on the lodges, birch bark and buffalo-ropes retained the knowledge of events for future generations. The totem-posts of the Tshimpsheans and the grave-posts of the Ojibways represent one kind of picture-writing limited in its application and yet necessary for recording facts. From the most primitive form of writing has this system developed, in the rough outline or full picture rudely drawn, through a symbolic stage until the perfect stage of writing was produced. In the Ojibway pictography the symbol for lightning is a rattlesnake. Colonel Mallery in explaining this development says:—"It can be readily seen how a hawk with bright eye and lofty flight might be selected as a symbol of divinity and royalty, and that the crocodile should denote darkness, while a slightly further step in metaphysical symbolism made the ostrich feather, from the equality of its filaments, typical of truth." In some of the pictographs the name of a man is made by making the head of a man and then placing the bird or animal which represents his name over the crown of the head, as in designating Chief *Red Crow* (Mikasto) a crow painted red is placed in position. Another method is to place the animal which represents the name upon the pictograph. This is shown in the *Selkirk Treaty*, where the chiefs signed their names by drawing animals representing them, which were placed opposite the tracts of land which they claimed. The appended copy of the signatures of the contracting parties to the *Selkirk Treaty* is taken from "The Treaties of Canada with the Indians of Manitoba, the North-West Territories and Keewatin."



OF RED RIVER ON THE DAY AFORESAID

(Signed) SELKIRK MACHE WNEOCAB. MECHKADENWIKONIG.

KAYAYOKIBINOVA

HIS MARK 

HIS MARK 

HIS MARK 

LE SONNANT

PEGOWIS

HIS MARK 

OUCKIDOAT

HIS MARK 

PREMIER

SIGNED IN PRESENCE OF

THOMAS THOMAS

JAMES BIRD

F. MATTHEY CAR.

R. D-ORSOMEOS CAPT

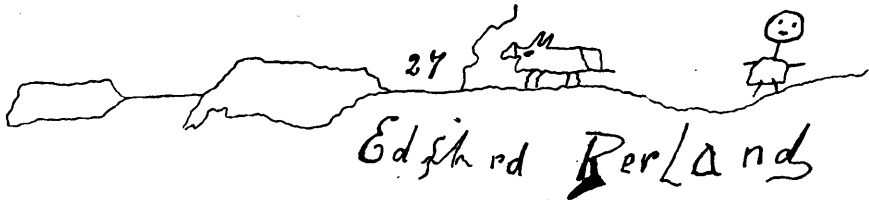
MILES MACDONELL

J. B. CH. DELORIMER

LOUIS NOLIN 1^{ER}.

THE SIGNATURES OF THE CONTRACTING PARTIES TO THE SELKIRK.

Rock-carvings and etchings on bone and shell are found, illustrating the modes of picture-writing. As in the Indian chant there is the repetition of a single idea, so in the native pictography there is an expression of a single thought represented by a pictograph. The headless body of an Indian with a gun or spear beside him represents death, and the means by which he was slain. The following pictograph was found by Sir George Simpson upon a tree as he was travelling in the West:



This was inscribed with a piece of burnt wood, and was nothing less than a letter for the information of the party. The contents of this pictograph were, that Edward Berland was awaiting the party with a band of twenty-seven horses at the point where the river received a tributary before expanding into two consecutive lakes. In a pictograph describing a battle, an Indian with an empty hand and fingers extended meant that he had no weapons with which to fight.

The native tribes used this system of writing extensively for the purpose of ornament, expression of religious ideas, recording of notable events, which may be the history of the tribe for half a century as in the Dakota Count, some single event in the life of a single individual, or a war party, or the autobiography of a man. Map-making by the Eskimo and Indians was accurately done on birch bark and other substances.

An Indian can describe upon the ground with a piece of wood, as I have seen them do, the geographical features of the country and various routes.

Concerning the Ojibway pictography, Schoolcraft says:—"For their pictographic devices the North American Indians have two terms, namely, *Kekeewin*, or such things as are generally understood by the tribe, and *Kekeenowin*, or teachings of the *medas*, or priests, and *jassakeeds* or prophets. The knowledge of the latter is chiefly confined to persons who are versed in their system of magic medicine or their religion, and may be deemed hieratic. The former consists of the common figurative signs, such as are employed at places of sepulture, or by hunting or travelling parties. It is also employed in the *muzzinabiks*, or rock-writings. Many of the figures are common to both, and are seen in the drawings generally; but it is to be understood that this

results from the figure-alphabet being precisely the same in both, while the devices of the nugamoons, or medicine, wabino, hunting and war songs are known solely to the initiates who have learned them, and who always pay high to the native professors for this knowledge." The mythology of the Indians was sometimes represented by pictographs. When Marquette and his companions went down the Mississippi a pictograph was seen which filled the Indians with awe, and they told him that this rock-inscription represented a story, which was "that a demon haunted the river at this place, whose roar could be heard at a great distance, and who would engulf them in the abyss where he dwelt; that the waters were full of frightful monsters who would devour them in their canoe." Rock inscriptions are abundant in the localities frequented by the Indians scattered over the northern part of the continent. Many of them, however, are in secluded places, and not easily discovered by travellers.

Birch-bark rolls are used by the Cree Indians, one of which, belonging to Louis Constant, is neatly illustrated in "The Rainbow of the North," with this explanation:—"Some time since he put into Mr. Hunter's hands the last relic of his former superstition. It is a roll of birch-rind, about four feet long and nearly a foot broad, and on the inner surface are scratched with some pointed instrument various hieroglyphic devices, intended to mark out the straight road to long life and happiness. This road is guarded on one side by figures of the sacred goose, and on the other by a corresponding row of the heads and arms of some of their other deities, while the supposed paths of the wicked diverge from the main road and are lost. But the whole is so uncouth that it is only worthy of attention as a proof of the extravagances into which the human mind is suffered to fall when it has departed from the living God. And yet it cannot rest satisfied without a guide, real or self-created. Louis Constant told Mr. Hunter that he used to regard this roll with the same reverence he now felt for the Bible, but that, as might be expected, it had since his conversion been to him a source of shame and sorrow." In various places in the Dominion pictographs have been discovered. Schoolcraft describes an elaborate inscription on the rocks on Cunningham's Island, ascribed to the Eries, a tribe now extinct. Some have been found in the country of the Micmacs in the eastern part of the Dominion. About twenty miles from Port Arthur and three and a half miles from Rabbit Mountain Mine, lying between it and Lake Superior, is a small lake opening out of Lake Oliver. Upon the rocky walls of one of the shores of this small lake are coloured pictures of men, canoes, paddles, crabs, serpents and other figures. There is the "Jesuits' Cross" on a rock on the northern shore of Lake Superior, between

Silver Islet and Nepigon, and upon the Nepigon River are pictographs so accurately drawn that Indians from the far north have been known to interpret their meaning. Upon the Missouri river near Cow Island, and about thirty miles south of Benton, there are figures of lodges, men fighting and similar pictures upon the face of the high cliffs, and so great is their elevation that the Indians say they are the works of the spirits. When the South Piegan Indians visited these rocks, they used them as models when they returned home, drawing figures on robes similar to those they had seen. Henry Shoecat, an intelligent young Indian who was acting as interpreter for the Mounted Police, informed me during my residence among the Blood Indians that there are some pictured rocks which he had seen between Helena and Sun River, in Montana, and others on the south side of Chief Mountain. Indians and white men have told me repeatedly of the wonderful *writing stones* on the Milk River, about forty miles from Lethbridge, and near the West Butte, where the Mounted Police have a post. These stones are covered with figures, some of which the Indians say were written by the spirits, but the better interpretation given by many of the Indians is that war-parties of the Bloods and Piegans passing to and fro were in the habit of writing upon these rocks, stating the number of men and horses there were in the camps of their enemies. This is the opinion of Jerry Potts, the Piegan chief and Mounted Police guide and interpreter. When Henry Shoecat was acting as interpreter at the police post near the *writing stones*, the men stationed there were in the habit of writing upon these stones, thus mingling the figures made by white men with the native pictography. Not far distant from the *writing stones*, and on Milk River, are several caves which have been visited by Jerry Potts and others, in which there are stone couches and drawings upon the walls.

The Blackfoot system of pictography was used by the Indians on the outside of their lodges. Figures were painted in different colours which were a record of the exploits of the master of the lodge. The scalp-locks were fastened above the picture-writing, the latter passing around, the figures generally enclosed between two lines, running evenly around the lodge leaving a space from two to three feet wide for the pictographs. The lodges of Medicine Calf, Red Crow and Bull Shield were especially noticeable in the early years. Some of the Indians could draw pictures of animals upon paper very well. Hunting and war scenes on paper or leather were also well executed.

One of my Blood Indian young men drew for me upon two sheets of foolscap, two specimens of the native pictography, which are here shown (Plates I., II.).

A short time ago I procured for a friend in England the hide of a steer having the autobiography of one of the Blackfeet upon it. This is the *Life of Many Shots*, which is here produced with the translation of this native autobiography.

LIFE OF MANY SHOTS.

1. There are two lodges and two carts at the place where Many Shots with a large party of warriors, who are following the foot-marks of their horses which have been stolen. They overtake their enemies, and Many Shots kills the last man. In front of the man at *A*, holding his gun in the act of shooting, will be seen small dots which represent the bullets flying. From the lodges at *B* following down by *A* will be seen small strokes—which can be distinguished from the footprints of the horses; these represent the number of journeys undertaken by *Many Shots*.

2. The wife of Many Shots has been out riding and has caught sight of an antelope, which she kills with an axe. She continues her journey and with the same weapon kills a bear.

3. There are six lodges of the Cree Indians, which do not mean actually that number, but a large camp. The Blackfeet steal the horses of the Crees, who follow them to recover their horses.

4. The Blackfeet make a rifle-pit where they come to a stand and fight. Within the pit they have a medicine-man with them, who can be distinguished by the medicine-pipe which he is smoking. The guns around the pit signify that there is a great number of Indians. In the fight there are three Crees and one Blackfoot killed. These are seen lying inside the rifle-pit.

5. There are four lodges. The Cree Indians stole the horses of the Blackfeet, who went in pursuit of them.

6. As they journeyed the Blackfeet killed an antelope. Many Shots met an Indian and stabbed him.

7. The Blackfeet still followed the Crees, and came to a place where five Indians had killed a buffalo.

8. They overtook the five Indians and killed one with an axe, four of the Cree Indians escaping.

9. A large circle of lodges, in which there was a great battle.

10. Beside this circle of lodges is a buffalo-pound, having two walls made upon the prairie, marking the path by which the buffalo were driven into the pound. Within the pound are two buffalo, and on the outside are Indians shooting at them. This is to show the method Many Shots used in killing buffalo.

11. This circle represents a lake, and within the circle is an elk, which is Many Shots' method and is according to the Blackfoot custom of naming it. The lake is called Elk Lake.

12. Three Sioux Indians are seen confronting Many Shots, who is on horseback. They shot and killed the man in front of the horse. The two remaining companions of Many Shots ran away, represented by the two men on foot running away from the horse. Many Shots fired at the Sioux Indians and killed the one farthest from him, as is shown by the man holding up his gun, and the blood flowing from under his arm.

13. Many Shots came upon two Indians fighting. He fired and broke the leg of one of the men, as can be seen from the blood flowing from his leg. Under this man's arm can be seen a bow and arrow which he took from the man. After he broke the leg of his enemy he ran towards him and killed him. Behind the horse of Many Shots can be seen a bow and seven guns, which represent the number which he took in the battles in which he was engaged.

14. The thirteen strokes in the middle of the robe represent the thirteen battles in which Many Shots was engaged during his life.

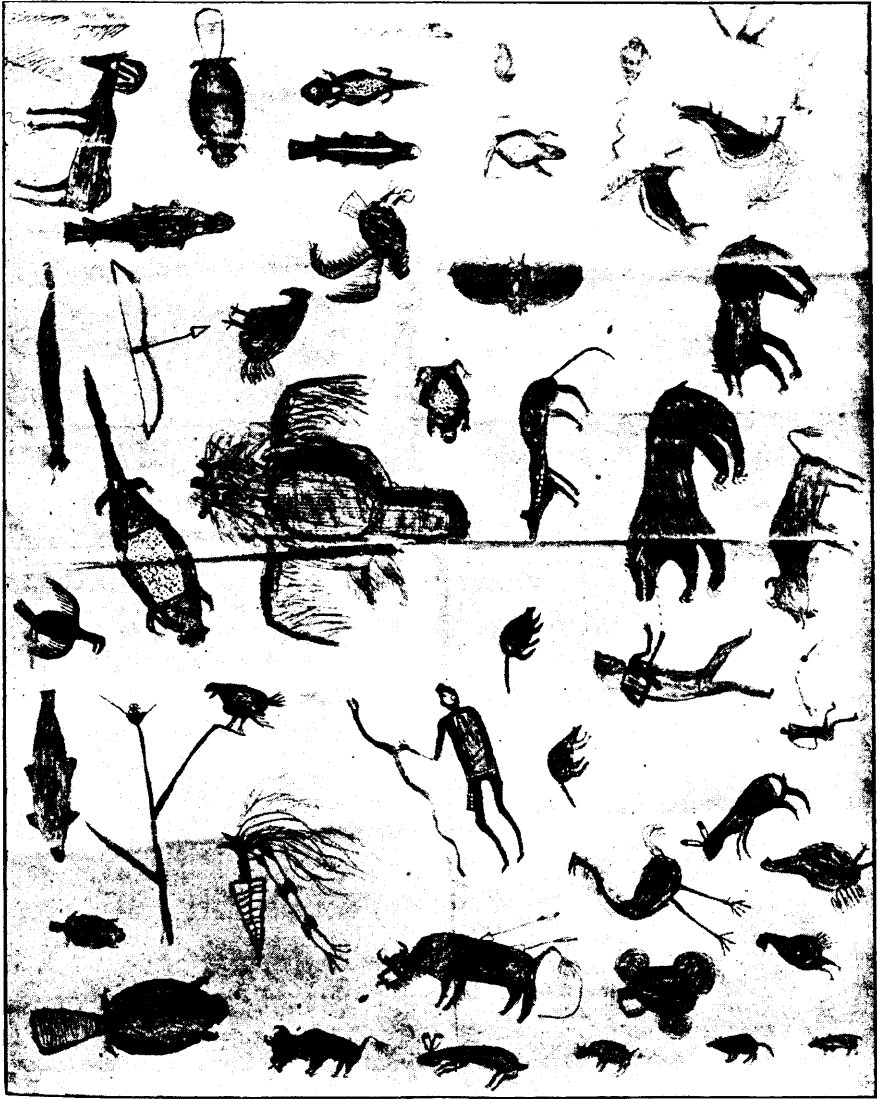
This is the history of the events of the life of Many Shots, as painted by himself in various colours upon a hide neatly tanned, in my possession, and the style of pictography fitly illustrates the system in use among the Blackfeet. Many Shots is the hero of every adventure, and the whole constitutes a native book on leather worthy of preservation.



(To face page 120.)

BLOOD INDIAN PICTOGRAPHS.

PLATE I.



(To face page 120.)

BLOOD INDIAN PICTOGRAPHS.

PLATE II.



LIFE OF MANY SHOTS.—BLACKFOOT PICTOGRAPHY.

(To face page 120.)

PLATE III.

RAINFALL AND LAKE LEVELS.

BY R. F. STUPART, Director of the Observatory, Toronto.

[*Read 22nd February, 1896.*]

During the past few months the rainfall observations taken at Canadian Meteorological stations up to the end of 1895 have been collected and collated for the purpose of publication. It occurred to me to try and discover how a varying annual rainfall affected lake levels, and whether there are any good grounds for belief that the levels are becoming permanently lower either owing to a diminished rainfall or from other causes.

Prior to 1872 there were but few rainfall stations in the Dominion. In that year, however, when the Meteorological Service was inaugurated, regular observations were begun at many stations, and at some of them a continuous record has been kept up to the present time, but at most voluntary stations observations are more or less desultory.

The lake level curves up to 1888 have been taken from Mr. Charles Crossman's chart, and the curves for subsequent years filled in from information supplied by Mr. E. S. Wheeler, Assistant U. S. Government Engineer, of Sault Ste. Marie, and by the Harbour Master of Toronto.

From my knowledge of the irregularities of rainfall distribution, I conceived that for a comparison of lake levels and rainfall curves the latter should be formed from means obtained from observations made at as large a number of stations as possible, and have therefore used all stations in the Lake Region, both American and Canadian, which go back as far as 1874.

For the watershed of Lake Superior we have three stations, Port Arthur, Duluth and Marquette; for Michigan and Huron, Beatrice, Orillia, Presqu' Isle, Point Clark, Goderich, Parry Sound, Southampton, Gravenhurst, Barrie, Alpena, Grand Haven, Chicago, Milwaukee, Escanaba, and Lansing.

For Lake Erie, Woodstock, Port Stanley, Port Dover, Detroit, Cleveland, Toledo; and for Lake Ontario, Toronto, Kingston, Buffalo, Rochester and Oswego.

Taking the pentad means at 30 stations scattered over the lake region we find very little ground for belief that the annual rainfall has

within the last quarter of a century been appreciably affected by deforestation and drainage. These five year periods shew total precipitation in inches as follows: 31.1, 36.6, 35.1, 32.5, and 32.1, a series from which it would be rash to predict that the mean of the next period will not be as great as of any of those preceding it. Taking the pentad means for Toronto alone we have ten such means, and the sum of the first five exceeds the sum of the last five, in fact the mean for the 1876-80 is the only one in the last set that is as great as the smallest mean among the first five. This looks suspicious, but we can throw additional light on this subject, as we have in "Rainfall and Snow of the United States," published by the Weather Bureau, a record of the total rain and snowfall at several places in New York and Ohio for longer periods than at Toronto. At Marietta, Ohio, the record goes back to 1818; at Albany, N.Y., and at Troy, N.Y., to 1826; at Rochester, to 1834; Steubenville, Ohio, to 1835. Marietta, Steubenville, and Rochester will probably best indicate the rainfall of the Lake Ontario drainage area since as a general thing the same storm centres which cause rain in Ohio, cause it over the Ontario district, while Albany and Troy are oftentimes affected by storm centres moving up the Atlantic coast. A study of these records (see table) shews pretty clearly that immediately south of Ontario and Erie, between 1834 and 1846, occurred a period of comparatively small precipitation, in fact to the present date we shall find no other period of 12 years with such a small rainfall; then immediately following this we find a period of much heavier rain. To my mind the figures in the table afford fairly strong evidence that the rainfall has not been appreciably affected by deforestation, and that a deficiency of rainfall may be considered as only temporary.

	PENTAD MEANS, 1818-22.	PENTAD MEANS, 1826-30.	PENTAD MEANS, 1831-35.	PENTAD MEANS, 1836-40.	PENTAD MEANS, 1841-45.	PENTAD MEANS, 1846-50.	PENTAD MEANS, 1851-55.	PENTAD MEANS, 1856-60.	PENTAD MEANS, 1861-65.	PENTAD MEANS, 1866-70.	PENTAD MEANS, 1871-75.	PENTAD MEANS, 1876-80.	PENTAD MEANS, 1881-85.	PENTAD MEANS, 1886-90.	PENTAD MEANS, 1891-95.	
Marietta, Ohio.....	42.6	41.8	43.9	37.6	39.4	47.4	40.6	44.8	43.2			38.1	39.7	47.0		
Troy, N.Y.		39.2	35.2	29.1	29.1	37.3	34.7	37.0	39.3	40.2	39.2	38.0				
Albany, N.Y.		40.2	39.8	42.1	41.3	43.6	37.8	35.8	36.3	42.9		39.0	36.6	40.6	35.3	
Rochester, N.Y.			28.9	31.2	35.3	31.2	34.5	36.1	37.6	37.6	37.6	39.2	30.7	32.7	34.8	
Steubenville, Ohio.....			59.2	33.7	38.2	50.8	38.2	46.8	43.4							
Toronto, Ont.						34.8	35.0	33.8	34.2	37.9	28.7	34.2	29.5	31.1	31.7	
Buffalo, N.Y.										37.9	39.9	33.6	40.8	39.5	39.4	38.5
Oswego.....										48.1	40.4	31.2	40.6	34.9	34.5	34.4
Lake Ontario Water Shed.....												32.2	38.1	33.9	34.6	33.7
Lake Erie Water Shed.....												32.9	37.2	35.1	33.5	31.6
Lake Huron Water Shed.....												31.3	36.8	36.6	32.3	33.3
Lake Region as a whole.....												31.1	36.6	35.1	32.5	32.1

A fact that should now be noted is that years of heavy precipitation in the Lake Ontario region are not usually years of heavy precipitation over the Upper Lakes and *vice versa*. To be convinced of this we have only to inspect the following table, which shews the departures from the average of twenty-five years in the various drainage areas, as obtained from the yearly means at the stations before mentioned:

YEAR.	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895
Lake Superior	+ "	+ "	+ "	+ "	+ "	- "	+ "	- "	- "	- "	+ "	- "	- "	- "	- "	- "	+ "	- "
	0.3	8.5	4.4	6.4	2.9	3.9	4.9	7.0	0.7	2.8	0.4	0.4	3.0	1.4	4.3	1.7	0.6	3.3
Lake Huron	4.4	0.7	4.7	0.4	0.5	6.0	2.1	1.6	0.0	3.7	5.1	2.5	0.8	1.6	1.6	1.4	4.5	3.7
Lake Erie	+ "	+ "	+ "	+ "	+ "	- "	+ "	- "	- "	- "	- "	+ "	- "	+ "	+ "	- "	- "	- "
	8.8	0.9	3.2	3.7	0.2	4.2	2.6	0.1	0.6	2.1	2.9	3.8	6.8	1.1	1.8	0.5	6.2	6.2
Lake Ontario	+ "	- "	+ "	- "	+ "	- "	+ "	+ "	+ "	- "	- "	+ "	- "	- "	+ "	+ "	- "	- "
	17.9	1.1	3.9	1.2	4.3	0.8	1.5	3.3	4.3	7.7	3.8	2.0	5.9	3.0	1.5	2.5	0.6	4.7

It will be observed in comparing the Ontario and Superior departures from average, that not only do the departures from average not agree as to percentage above or below normal, but in 13 out of 18 years they differ as to sign; years with an excess of precipitation in one district being years of deficiency in the other. A comparison of Lake Ontario with Lake Huron shews a less marked difference, but even there it is very pronounced.

There being then such strong evidence that years of small precipitation in the Ontario region are usually years of heavy precipitation over the Upper Lakes, we may surmise that from 1834-46 was on the whole a rainy period in the Upper Lake region.

A glance at the lake level curves shews that obviously the seasonal fluctuations are mainly attributable to the melting of the snow in the spring, and to precipitation; while streams are all full and evaporation is not very great the lakes rise very rapidly, and then after midsummer, or in the case of Lake Superior after the end of August, fall steadily until the melting of the snow in the following spring.

The average annual range in feet of Lake Superior is 1.2, Lake Huron 1.3, Lake Erie 1.6, and Ontario 1.8.

The curves shewing variation in annual rainfall, and the mean lake levels, except that of Superior, are strikingly similar in form for the greater portion of the period for which we have sufficient data, but marked disagreements in some few years, and certain other features shewn graphically on the charts indicate very clearly that, although the level of each lake responds to an increased or diminished rainfall, there are other factors to be considered.

The two principal factors governing the level of the water in any one of the various lakes are the precipitation over its own drainage area and the stage of the water in the lake above it. Other factors are evaporation, wind, etc.; but these we must at present regard as fairly constant, as a consideration of them would entail an immense amount of work. I had thought before charting the curves for Lake Superior that the mean rainfall as deduced from the observations at the three stations before named would give a very fair approximation to the precipitation over the water-shed of that lake, and Lake Superior being the head of the chain, and the rivers and streams emptying into it being for the most part small, I should at once find a very clear and undoubted similarity between the annual lake level and rainfall curves, but I was disappointed. The mean annual level does not seem to respond in by any means a satisfactory manner to the changes in the mean annual rainfall, as deduced from the three stations before named; and the most probable explanation of the discordance is that the rainfall curve is not based on sufficient data, and does not shew the true state of affairs. The greater part of the drainage area of Lake Superior lies to the north, a region where until but a few years ago no observations of the rainfall were taken. For eight years, however, a regular record has been kept at White River, at which station during 1893-4-5 the rainfall was much in excess of the average of the eight years, and would form a curve well in accord with the lake levels, whereas the rainfall over the western portion of the lake was below average. It is then obvious that we are not at present in a position to draw a curve shewing with a sufficient degree of accuracy the rainfall over the water-shed of Lake Superior.

We will now briefly consider the state of affairs in the region of the great lakes since 1870, assuming as a fact that the level of that lake is altogether governed by rainfall over its own drainage area. In 1870 the levels of Superior and Huron were medium, but during the autumn an abnormal fall of the former began. The summer stage of Ontario in this year was very high, clearly owing to one of the largest rainfalls on record occurring over its drainage area. The two following years were low water years on Lake Superior, and Lake Huron felt the effect of it, and with a rainfall of 3.1 inches below average in 1871, and 4.0 below in 1872, the water level was in the latter year fairly low. The diminished head of water in the higher lakes, and a precipitation several inches less than average, brought a rapid lowering of Ontario, and 1872 was a year of decidedly low water. During 1873 Lake Superior was a trifle above mean level, and this fairly good level seems to have outweighed an under average rainfall in the Lake Huron area, as that lake although still low was slowly rising. Ontario rose very considerably in this year, notwithstanding the low water in the

Upper Lakes, the rise being clearly attributable to unusually heavy precipitation. In 1874 Superior was a little higher, but a pronounced deficiency of rainfall over the Lake Huron area caused that lake to remain nearly stationary, notwithstanding the good inflow from Lake Superior; and the effect of the comparatively low water in Huron, combined with a small precipitation over the drainage area of Ontario, is clearly marked by the decided decrease in the level of Ontario. In 1875 Superior was still fairly high, and as the rainfall over the Huron area was well up to average, that lake rose, but was still below mean level, and Ontario, with a deficiency of rainfall, was also low. In 1876 the Ontario level shewed the marked influence of high water in the Upper Lakes. Superior was high, and this fact with a large precipitation over the Lake Huron drainage area caused a marked rise and high water on that lake also, and to this must be attributed the high water in Ontario as over its drainage area the precipitation was only average. Now followed four years of low water on Lake Superior which counteracted the effect of an above average precipitation over Lake Huron, which lake fell steadily in 1877 and 1878, and was low in 1879 and 1880. On Lake Ontario while the level fell in 1877 with a small rainfall, in 1878 very heavy rains in the autumn produced an altogether abnormally high winter stage, but in 1879 the level fell to decidedly low, and in 1880 even a rainfall of four inches above average was unable to counteract the effect of the low water in the Upper Lakes. Six years now follow with Superior either average or a little below average level and on Lake Huron a level steadily increasing from the mean level to high water, clearly due to the precipitation being much above average. The curve for Ontario during this period was somewhat similar to Huron, the level of the lake increasing from a low to a decidedly high stage, and this during the first four years, notwithstanding a deficiency of precipitation over the drainage area. Taking the last period, from 1887 to date, we find that Superior during the first two years was a little low, with a tendency to increase, then a very slowly lowering stage until the spring of 1892, when the level was lower than at any time since 1880. Next spring it reached the same mark, and then a rise began, and in September 1895 the level was higher than at any time since 1878. There was then low water in Lake Superior from 1887 to 1894, and this helped to lower Lake Huron, and the rainfall over the Lake Huron drainage area was for the five consecutive years, 1887-1891, and again in 1894 and 1895, much below average. We can now see why Lake Huron is so decidedly low—it is due to Lake Superior having been low for some years until 1894, combined with the effect of an abnormal deficiency of rainfall from 1887 until 1895, excepting the years 1892

and 1893. At the beginning of this same period in 1887 Lake Ontario was high, but two years of exceedingly small rainfall rapidly lowered the level. In 1889 and 1890 the rainfall was above average and temporarily checked the fall which would have resulted from the low water in the Upper Lakes, but in 1891 a marked deficiency of precipitation brought a very low winter stage. Two years, 1892 and 1893, of above average rainfall now improved the level a little, but the deficiency of rainfall in 1894 and 1895, and particularly in the latter year, in conjunction with the effect of a small intake of water by the Niagara River, doubtless produced the almost phenomenally low stage of the past year. I believe that these facts are amply sufficient to explain the present state of affairs.

I was at first rather nonplussed to account for the fact that the highest water on record, in 1838, occurred during a period which the Ohio and New York records which I have quoted, indicate as a dry period, but I now think that it is probably quite unnecessary to be disconcerted by this, as our table giving departures from average rainfall during the various years in the several drainage areas, shews so conclusively that when the Ontario district has an under average rainfall the Upper Lakes usually have an excess. We have a very significant instance of the effect of such conditions, when between 1881 and 1884 Ontario rose from low water to a decidedly high stage, notwithstanding a marked deficiency of rainfall during the four years. Somewhat similar conditions prior to 1838 may well have produced the very high stage of that year.

Meteorologists have so far been unable to prove that terms of excessive rainfall or the contrary are periodical. It is not, however, improbable that there are several physical influences which periodically affect the precipitation, and it may be that in some periods these influences work in unison to increase it while at other times they interfere, and should this supposition be correct, we can easily understand that we are dealing with a very complicated subject, and that observations during a long period of years will be necessary to unravel the mystery.

In view of these facts it is quite unreasonable to suppose that Lake Ontario will this year or even next year attain a high stage, the increase is likely to be gradual. Lake Superior is, as we have seen already, high; this will help to raise the level of Huron, which lake will rise if the rainfall be even up to average, and then with an improving head of water in that lake, and consequently in Erie, the flow by the Niagara will improve and assist in raising the level of Ontario, but with so many factors to be considered it is impossible to predict with any certainty how long it will be before a really high stage is again reached.

THE BLACKFOOT LANGUAGE.

BY REV. JOHN MACLEAN, M.A., PH.D.

[Read 11th April, 1896.]

The Blackfoot Language is spoken by the Indians belonging to the Blackfoot Confederacy, consisting of the tribes known as Bloods, Piegans and Blackfeet. These tribes are resident in Montana, United States, and Alberta, Canada. They possess no written characters, and consequently have not any native literature. Their knowledge of important events is transmitted by means of oral tradition, and their records of deeds are expressed by picture-writing.

The language is a rich deep guttural, difficult at first to be pronounced or understood, owing to the rapid utterances of the Indians. Students of Indian languages are very apt to make mistakes in the early stages of their studies, from the fact that many of the Indians conversing with them use "broken speech." At once they conclude that the language is very easily acquired, but if they will continue their studies faithfully they will soon learn that they have a hard task before them, which can only be mastered by intelligent and enthusiastic labour. Some time will elapse before the sounds peculiar to the language become familiar to the ear, but gradually these will separate themselves and become easily distinguished.

One striking peculiarity is the dropping of the first and last syllables of words. Familiarity with the language will enable the student to detect this whenever it is done. Take such an example as *n̄tũkskũm*, which means *one*. Sometimes it is expressed in full, but I have oftentimes heard it as follows: *n̄tũks*, *n̄tũkska*, *tũkskũm* and *tũkska*. The prevalence of the guttural induces this dropping of syllables. The first and last syllables are at times expressed in such a low tone that they become inaudible to our ears.

The Blackfoot, like many other Indian languages, possesses the property of agglutination, and hence assumes the verbal form of expression. Indian languages are languages of verbs, and the Blackfoot is no exception to the general rule. He who would master an Indian language must give his days and nights to the study of the verb.

Dialectic changes are rapidly taking place amongst the tribes, resulting from separation. Differences of pronunciation and different words

“coined” for things unknown to them when they lived together as the netsepoye, *i.e.*, the people that speak the same language, are the results of the advent of the white race and their superior civilization.

ORTHOGRAPHY.

A standard system of orthography is a necessity in reducing any language to writing. Students of Indian languages not being guided by a standard system, generally adopt a phonetic method of spelling, which varies with the mental training or acute perception of the individual. A “key” to the individual systems must then accompany every book written in the language for the use of others, and oftentimes this is very difficult of application in studying the language. Having used a system of my own for several years, I was ultimately induced to abandon it after an examination of the universal alphabet of the Bureau of Ethnology, Washington, United States. This was in my opinion preferable to the Standard Alphabet of Lepsius, and I therefore selected the letters with their combinations which were suitable for expressing the sounds of the Blackfoot Language. Instead of arranging this standard system in different sections, treating of vowels, consonants, diphthongs and double letters, the whole has been placed consecutively, thus becoming a “key” which can be easily memorized and is ready for reference.

THE ALPHABET.

- a as in far, father : as *sīnaksīn* = a book or letter.
- â as in law, all : as *napīkwān* = a white man.
- ai as in aisle, and as *i* in pine : as *kūnaitūpī* = all the people.
- au as *ou* in out and *ow* in how : as *mamyauyekwān* = a fish eater.
- e as in they, like *a* in fate : as *asetūqta* = a small stream.
- ě as in then, met : as *nītonoetsī* = I am hungry.
- h as in ha, he : as *hau ! hau* = a form of salutation.
- i as in pique, machine : as *imīta* = a dog.
- ī as in pick, pin : as *kīpītakī* = an old woman.
- k as in kick : as *kaksakīn* = an axe.
- m as in man, money : as *manikūpī* = a young man.
- n as in nun, now : as *notas* = my horse.
- o as in note : as *oqké* = water.
- p as in pipe : as *ponokamīta* = a horse.
- q as *ch* in loch—*guttural* : as *oqkotokī* = a stone.
- s as in sauce : as *sokasīm* = an outer garment or coat.
- t as in touch : *neetūqta* = a river.
- u as in rule, full : *puqsīput* = come thou here.

EUPHONY.

In the combination of letters and the formation of words, strict attention is paid to the agreeableness of sound. This is one of the peculiar characteristics of the language. In the formation of compound words, when two syllables come together, which in combination will produce a harsh sound, one of the syllables is elided, as: omûqkîmî = big, nina = a chief. When combined, the *mî* of the simple adjective is rejected and it becomes omûqkînina = a big chief. Niokskûm = three, otasîks = horses (his), niokskotasîks = three horses.

When two simple words in combination possess several harsh-sounding consonants, two or more of the syllables are elided, as: siksînûm = black, oqkotokî = stone, sikoqkotokî = black stone, *i.e.*, coal. When two or more vowels come together in word-forming, and the sound resulting from their union is not harmonious, a consonant is inserted to secure the euphony. This is particularly noticeable in the verb, with its article, pronoun or pronominal prefix, as: nîstoa = I, awan = root of verb, î = verbal termination. When combined we have: nî-t-awan-î = I say, kî-t-awan-î = thou sayest, awan-îo = he says. The letter *t* is inserted to secure harmony of sound.

Sometimes a vowel is changed in combination, as: omûqkîmî = big, kaio = bear. From these we have: omûqkokaio = big bear. Here the last syllable of the adjective is elided, and the last vowel remaining, namely *î*, is changed to *o*. Sometimes a vowel is rejected in combination, as: ponoka = deer, imîta = dog. Combined, we have ponokamîta = deer-dog, *i.e.*, a horse.

All the parts of speech are found in the language except the article. The numeral adjective nîtukskûm = one, and the demonstrative pronouns amo = this, and oma = that, are used to supply the place of the articles as, nîtukskûm ponokamîta = one horse, or a horse, amakio = this woman, amakekwân = this girl, or the girl, omakekwân = that girl, or the girl. They do not strictly supply the place of the articles, but they are used for that purpose.

The Blackfoot, Cree and Ojibway languages belong to the Algonkin family of languages, and in order to show the relation existing between them, there is subjoined a list of words in these three languages. The Blackfoot, Blood and Piegan tribes speak dialects of the Blackfoot, but as the changes made are slight, except in the coining of new words, it would not be expedient to spend time in tracing these differences. The lists of the three related languages are as follows:—

ENGLISH.	BLACKFOOT.	CREE.	OJIBWAY.
Man. (A human being—a person.)	Matúpi.	Aiyíño.	Anishínabí.
Man. (As distinguished from a woman.)	Ninao.	Napeo.	Īnīnī & Anīnī.
Woman.	Akio.	Īskweo.	Īkwe & Akwe.
Girl.	Akekwân.	Īskwesís.	Īkwēsēs.
Boy.	Saqkomapí.	Napes & Napesís.	Kwíwísēs.
My father.	Nina.	Notawí.	Nos.
His father.	Oní & Uní.	Otawía.	Osan.
My mother.	Niksísta.	Níkawí.	Níngú.
My son.	Noqkoa.	Níkosis.	Níngwís.
My daughter.	Nítúna.	Nítúnís.	Níndúnís.
My child.	Nokos.	Nowasís.	Níndjanís.
My elder brother.	Neesa.	Nístes.	Nísaií.
My younger brother.	Nískún.	Nísim.	Níshímí.
My elder sister.	Ninísta.	Nímís.	Nímísí.
My younger sister.	Nísísa.	Nísim.	Níshímí.
My brother-in-law. (The brother of my wife.)	Nístúmo.	Nístau.	Níta.
My brother-in-law. (The husband of my sister—male speaking.)	Nístúmoqko.	Nítúm.	Níta.
My sister-in-law. (Wife of brother—male speaking.)	Ninísa.		Níním.
My wife.	Nítóqkeman.	Niwa.	Nínwidígímagán.
My husband.	Noma.	Ninabem.	Nínabím.
My head.	Notokaní.	Nístíkwán.	Níshítígwán.
My foot.	Noqkúts.	Nísít.	Nísíd.
My tooth.	Noqpekín.	Nípít.	Nínbíd.
My throat.	Noqkíston.	Níkutakún.	Níngongagan.
My brain.	Nopí.	Niyítíp.	Níníndífb.
Mouth.	Maáye.	Mítón.	Míndon.
Tongue.	Matsíne.	Míteyúní.	Dínaníño.
Fire.	Īstci.	Īskuteo.	Ishkoíí.
Water.	Oqké.	Nípi.	Níbí.
River.	Neetúqta.	Sipi.	Síbí.
Wood.	Místcís.	Místík.	Mítíg.

ENGLISH.	BLACKFOOT.	CREE.	OJIBWAY.
Blood.	Apûn.	Mîko.	Mîskwî.
Lodge.	Moyîs.	Mikîwap & Apakwasûn.	Wigîwam.
Knife.	Îstoan.	Mokuman.	Mokoman.
Sun.	Natos.	Pisîm.	Gîsîs.
Earth, land.	Tsaqkom.	Ûskî.	Akî.
Dog.	Imîta.	Ûtîm.	Anîmosh & Onîm.
Winter.	Stoye.	Pîpon.	Bîbon.
Bow.	Netsînamau & Namau.	Atcapî.	Mîtgwab.
Moccasin.	Matsîkîn.	Mûskîsîn.	Makîsîn.
Stone.	Oqkotokî.	Asînî.	Asîn.
Snow.	Konîsko.	Kona.	Gon.
Ice.	Kokotoyî.	Mîskwamiî.	Mîkwam.
One.	Nîtuksûm.	Peyûk.	Bîjîg.
Two.	Natokûm.	Niso.	Nîj.
Three.	Niokskûm.	Nîsto.	Nîswî.
Four.	Nîsoyîm & Niso.	Neo.	Nîwîm.
Five.	Nîsîto & Nîsîtcî.	Nîyanûm.	Nanan.
Six.	Nao.	Nîkotwasîk.	Nîngotwaswî.
Seven.	Îkîtcîka & Îkîtcîkûm.	Tepakûp & Nisoasîk.	Nîjwasî.
Eight.	Nanîsoyîm & Naniso.	Jananeo.	Nîshwaswî.
Nine.	Piqseo.	Peyûkosteoo.	Jangaswî.
Ten.	Kepî & Kepo.	Mîtat & Mîtatût.	Mîdaswî.
He eats.	Auyeo.	Mitcîsûo.	Wîsîno.
He sits.	Îpeo.	Ûpio.	Namadabî.
He sleeps.	Aiokao.	Nîpau.	Nîba.
He is sick.	Aioqtokosîo.	Akusîo.	Ûkosî.
He comes here.	Paiuqsapu.	Peitûteo & Astam.	Bîdjîja.
He goes away.	Aîsîstûpo.	Matcîo.	Madja.
He goes in.	Paiyemae.	Pîtuqueo.	Pîndîgî.
He goes out.	Sûkseo.	Wayawîo.	Sagaam.
He loves him.	Ûkomimîo.	Sakîheo.	Sagîa.
He loves it.	Ukomitcîmae.	Sakîlao.	Sagîton.
It rains.	Aisotao.	Kîmiwûn.	Gîmîwan.
It snows.	Potao.	Mîspun.	Sogîpo.

THE NOUN.

In accordance with the agglutinative tendency of Indian languages, the Blackfoot language uses a verbalized form of speech and the noun occupies an inferior position. Nouns are seldom used separately. They are generally incorporated with the verb. It is needful, however, to understand the noun thoroughly, because of its relation to other parts of the language, and the changes that take place in the construction of the same. There are three classes of nouns, namely: proper, common and abstract. As examples of proper nouns we have: sotaina = rain chief, from the combination of aisotao and nina, ninastûko = chief mountain, from nina = chief and mistûki = a mountain, namûqta = Bow river, *i.e.*, nama = a bow or gun, and neetûqta = a river.

The following are examples of common nouns: mamé = a fish, iinakikwân = a policeman, sinaksin = a book or letter, painokanats = paper, napyoyis = a house.

Many of the abstract nouns end in sin. This, however, is variable: pukasin = childhood, ûkomimisîn = love, kimatapsin = poverty, aioqto-kosin = sickness, itamitûksin = happiness.

In treating of nouns there is seen to be for certain classes similar terminations which are general. There are many exceptions to this, even when relating to kindred subjects.

Names of water end in kimî and komî.

Stokimî	= cold water.
Ksistokomî	= warm water.
Motoyimûqsikimî	= water everywhere, <i>i.e.</i> , the sea.
Moyikimî	= a grassy lake.
Omûksikimî	= big water, <i>i.e.</i> , a lake.
Pûksikimî	= a swamp.
Pistcikimî	= salt water.
Apatsikimî	= a broad river.
Asiksikimî	= black water, <i>i.e.</i> , tea.
Otoqkweksikimî	= yellow water.
Mauqsiksikimî	= red water.
Ksiksikimî	= white water.

Names of buildings end in oyis.

Moyis	= a lodge.
Nîtapoyis	= a native house, an Indian house.
Napyoyis	= a house, a white man's house.
Matâkyoyis	= a potato house, <i>i.e.</i> , a root house.

Ponokamītoyīs	= a horse's house, <i>i.e.</i> , a stable.
Oqtokosapyoyīs	= a sick house, <i>i.e.</i> , an hospital.
Oqkotoksapyoyīs	= a stone house.
Makapyoyīs	= a dirty house.
Akapyoyīs	= many houses, <i>i.e.</i> , a village or town.
Natoapyoyīs	= a holy or divine house, <i>i.e.</i> , a church.
Omûqkûtoapyoyīs	= a large holy house, <i>i.e.</i> , a cathedral or large church.

Names of cloth end in aipīstcī.

Naipīstcī	= a blanket, cloth.	Sīkaipīstcī	= black cloth.
Maukaipīstcī	= red cloth.	Apaipīstcī	= white cloth.
Otskaipīstcī	= blue cloth.	Otoqkaipīstcī	= yellow cloth.
Īstoqkaipīstcī	= cotton.	Omûqkaipīstcī	= a large blanket.
Īnûkaipīstcī	= a small blanket.		

Names of earth end in koyī.

Tsaqkoyī	= earth, land.
Aikimīkoyī	= table land.
Spûtsīkoyī	= sand hills (spûtsīko = sand).
Pikīskoyī	= range of hills.
Kawûqkoyī	= ravines.
Pawûqkoyī	= ravines.
Moqsokoyī	= a road (moqsoko = a footprint).
Sīkakoyī	= black soil.
Otoqkoyī	= yellow soil.
Atsoaskoyī	= woodland, forest, bush.
Pûqtokskoyī	= pine timber land, pine forest.

FORMATION OF NOUNS.

Diminutive Nouns are formed by adding as a prefix ĩnûk, ĩnûks, ĩnûksa, ĩnûksī.

Akekwan	= a girl.	Īnûkakekwan	= a little girl.
Puka	= a child.	Īnûksīpuka	= a little child.
Matakī	= a potato.	Īnûkatakī	= a small potato.
Kûkûtos	= a star.	Īnûkûkûtos	= a small star.
Napekwan	= a white man.	Īnûksapekwan	= a small white man.
Saqkomapī	= a boy.	Īnûksaqkomapī	= a small boy.

Personal Abstract Nouns are formed from verbs by adding apī or ûpī, the termination of matûpī, *i.e.*, a person, as :

Matcapsio	= he is foolish.	Matcapsetûpĩ	= a foolish one.
Kimatapsio	= he is poor.	Kimatapsetûpĩ	= a poor one.
Skunatapsio	= he is strong.	Skunatapsetûpĩ	= a strong one.
Mokûkiõ	= he is wise, careful.	Mokûkiatûpĩ	= a wise person.

Nouns are formed from Verbs by

1. Adding *sin* to the root of the verb, as: aisinakeo = he writes. Sĩnak is the root of the verb, and by adding *sin* as a suffix we have: sĩnaksĩn = a writing, letter; spiksĩnaksĩn = a thick writing, *i.e.*, a book. Sĩnaksĩn is now used by the Indians for a letter, newspaper, book or document of any kind. Aisanakĩ = a clerk, amanuensis.

2. Adding *oksĩn* as a suffix to the root of the verb as: akonimio = he loves. Omim is the root of the verb. Akonimoksĩn = love.

3. Rejecting the verbal termination of the third person singular of the imperfect tense, and adding *sin* as a suffix.

Aitametûkeo = he is glad, happy. Etametûkeo = he was happy.

Etametûksĩn = happiness.

4. Rejecting the verbal termination of the third singular present indicative and adding *in* as a suffix, as: aqseo = he is good; aqsĩn = goodness.

5. Adding *ûqsĩn* to the root of the verb, with the tense particle of the imperfect indicative mood, as: epoyeo = he spoke; epouqsĩn = speech.

Other examples of the formation of nouns from verbs are shown as follows:

Nitûsikĩtsikiqka	= I make shoes.
Atsekĩn	= a shoe, moccasin.
Ûstsikĩtsikiqkae	= a shoemaker.
Nítaiamûqkĩ	= I am sweeping.
Namûqkimatsĩs	= a broom.
Nítaikûqksĩstûkĩ	= I am sawing (across).
Ïqtaikûqksĩstûkiop	= a hand saw.
Nítainamauqkao	= I make a gun.
Namaua	= a gun, bow.
Ïtainamauqkapi	= a gunsmith.
Apautûkeo	= he is working.
Apotûksĩn	= work.

Aioqtokoqsio	= he is sick.
Aioqtokoqsin	= sickness.
Aioqtokoqsapyoyis	= an hospital; literally, a sick house.

GENDER.

There are two genders, the animate and inanimate. As in the English language, the adjective undergoes no change when applied alternately to masculine and feminine, so there is none in the Blackfoot language. Thus, we say:

Matomaitupi	= the first man.	Matomakio	= the first woman.
Aqsitupi	= a good man.	Aqsiaquio	= a good woman.

The pronoun ostoyi has no distinction of sex—signifying he, she, it. There being no grammatical change resulting from the distinction of sex, two genders only are used—the animate, relating to things having life, and the inanimate, which refers to things without life. There are some inanimate things, however, that are treated as if they possessed life. Nearly all names of implements are classed as animates, as:

Kaksakin	= an axe.	Kaksakiqs	= axes.
Namayē and Namau	= a bow or gun.	Namayiks	= bows, guns.
Apsinamau	= an arrow gun, <i>i.e.</i> , a bow.		
Īstoan	= a knife.	Īstoeks	= knives.
Notoan	= my knife.	Notoaks	= my knives.

Trees, plants, and various objects of vegetable nature have the termination for the animate gender, as:

Mīstcīs	= a tree.	Mīstceqs	= trees.
Pūqtokī	= a pine tree.	Pūqtokiqs	= pine trees.

Inanimate objects, which are related to the native religion of the Indians and are held as sacred, are classed as animates, as:

Natos	= the sun.	Natosiqs	= suns, also moons and months
Omūqkatos	= the great sun.		
Kūkūtos	= a star.	Kūkūtosiqs	= stars.
Kokumekesim	= the moon.	Kokumekesimiqs	= moons.
Neetūqta	= a river.	Neetūqtaks	= rivers.

Modes of denoting Sex.

There are different modes of denoting sex.

1st.—*By using different words.*

Nina	= a man.	Ake	= a woman.
Saqkomapī	= a boy.	Akekwān	= a girl.
Nina	= my father.	Niksīsta	= my mother.
Noma	= my husband.	Nītoqkeman	= my wife.
Noqkoa	= my son.	Nītūna	= my daughter.

2nd.—By the use of *kwān* for the masculine and *ake* for the feminine terminations.

Napekwān	= a white man, <i>i.e.</i> , an English-speaking white man.
Napeake	= a white man's Indian wife.
Nītsapeake	= a white woman.
Ḳainakwān	= a Blood Indian man.
Kainake	= a Blood Indian woman.
Saiapekwān	= a Cree half-breed.
Saiapeake	= a Cree half-breed woman.

There are some exceptions to this rule, as : akekwān = a girl, which has a termination similar to the masculine.

3rd.—By adding *napīm* or *stamīk* for the masculine and *skīm* or *skento* for the feminine. This applies solely to animals.

Apotskina stamīk	= a bull.	Ponokamīta skīm	= a mare.
Apotskina skīm	= a cow.	Awatoyīstamīk	= a buck.
Ponokamīta stamīk	= a stallion.	Awatoyīskīm	= a doe.

NUMBER.

Number is that change in form which denotes whether or not we are speaking of one object or more.

Nouns have two numbers, singular and plural.

The *Singular* number denotes one object, as :

Moyīs	= a lodge.	Neetūqta	= a river.
Īstoan	= a knife.	Imīta	= a dog.
Ūqkioqsatsīs	= a boat.		

The *Plural* number denotes more than one object of that for which the noun stands.

Moyists	= lodges.	Oqkotokists	= stones.
Sinaksists	= letters.	Tcistcikwists	= days.
Ponokamitaks	= horses.	Matupiks	= peoples.

There are several nouns which have no plural, as :

Napinoan	= sugar.	Unikis	= milk.
----------	----------	--------	---------

The *Animate Nouns* form the plural by adding *ks*, *iks* or *sk*s to the singular, as :

Ponoka	= deer.	Ponokaks	= deer.
Nokos	= my child.	Nokosiks	= my children.
Mame	= a fish.	Mameks	= fishes.

Inanimate Nouns form the plural by adding *ts* or *sts* to the singular, as :

Napyoyis	= a house.	Napyoyists	= houses.
Matakī	= a potato.	Matakists	= potatoes.
Oqpekīn	= his tooth.	Oqpekists	= his teeth.

In the formation of the plural, before adding the terminations, sometimes a syllable is dropped, or there is a change or elision of one or two vowels or consonants, as :

Akio	= a woman.	Akeks	= women.
Napekwān	= a white man.	Napekwēks	= white men.
Matsikīn	= a moccasin.	Matsikists	= moccasins.

CASE.

Case is the form in which a noun is used in order to show its relation to some other word in the sentence.

There are three cases in the language, nominative, possessive and accusative. The possessive case is formed by adding as a prefix the abbreviated forms of the possessive pronoun, as :

- N, nī, nīt and nīts for the first person.
- K, kī, kīt and kīts for the second person.
- O, ot and ots for the third person.

Amo nītsapyoyis	= this (is) my house.
Oma kotas	= that (is) thy horse.
Saḡkomapī otsīnaksīn	= the boy, his book,—the boy's book.

ANIMATE NOUN IN THE POSSESSIVE CASE.

	BLACKFOOT.	CREE.	OJIBWAY.
SINGULAR.			
1. My father (or chief).	Nina.	Notawī.	Nos.
2. Thy father (or chief).	Kina.	Kotawī.	Kos.
3. His, her father (or chief).	Onī.	Otawīa.	Osan.
PLURAL.			
<i>Exclusive.</i>			
1. Our father.	Ninan.	Notawīnan.	Nosinan.
<i>Inclusive.</i>			
1. Our father.	Kinon.	Kotawīnau.	Kosīnan.
2. Your father.	Kinawa.	Kotawīwau.	Kosīwa.
3. Their father.	Onīao.	Otawīwaua.	Osīwan.
SINGULAR.			
1. My fathers.	Ninaeks.	Notawīûk.	Nosag.
2. Thy fathers.	Kinaeks.	Kotawīûk.	Kosag.
3. His, her fathers.	Onīeks.	Otawīa.	Osan.
PLURAL.			
<i>Exclusive.</i>			
1. Our fathers.	Ninaneks.	Notawīnanûk.	Nosīnanīg.
<i>Inclusive.</i>			
1. Our fathers.	Kinoneks.	Kotawīnanûk.	Kosīnanīg.
2. Your fathers.	Kinawaeks.	Kotawīwanûk.	Kosīwag.
3. Their fathers.	Onīaoeks.	Otawīwaua.	Osīwan.

Notas = my horse.

SINGULAR.

My horse = Notas.
 Thy " = Kotas.
 His " = Otas.

Exclusive.

Our horse = Notasīnan.

PLURAL.

My horses = Notasīks.
 Thy " = Kotasīks.
 His " = Otasīks.

Exclusive.

Our horses = Notasīnanīks.

Inclusive.

Our horse = Kotasīnon.

Your " = Kotasīwao.

Their " = Otasīawa.

Inclusive.

Our horses = Kotasīnoniks.

Your " = Kotasīwawīks.

Their " = Otasīawawīks.

There will be noticed in the above comparative table, the two first persons plural, which for greater clearness I have designated exclusive and inclusive.

The *Exclusive Plural* embraces the *first* and *second* persons only.

The *Inclusive Plural* embraces the *first* and *third* persons only.

This peculiar construction ensures a greater degree of definiteness than is to be found amongst many of the languages of civilized races. It applies to the pronouns and the verbs, and when once intelligently grasped will ever be easily remembered.

INANIMATE NOUN IN THE POSSESSIVE CASE.

	BLACKFOOT.	CREE.	OJIBWAY.
SINGULAR.			
1. My book (or letter).	Nītsīnaksīn.	Nīmasīnahīgan.	Nīnmasīnaīgan.
2. Thy book.	Kītsīnaksīn.	Kīmasīnahīgan.	Kīmasīnaīgan.
3. His, her book.	Otsīnaksīn.	Omasīnahīgan.	Omasīnaīgan.
PLURAL.			
<i>Exclusive,</i>			
1. Our book.	Nītsīnaksīnan.	Nīmasīnahīganīnan.	Nīnmasīnaīganīnan.
<i>Inclusive,</i>			
1. Our book.	Kītsīnaksīnon.	Kīmasīnahīganīnau.	Kīmasīnaīganīnan.
2. Your book.	Kītsīnaksīnoawa.	Kīmasīnahīganīwau.	Kīmasīnaīganīwa:
3. Their book.	Otsīnaksīna.	Omasīnahīganīwau.	Omasīnaīganīwa.
SINGULAR.			
1. My books (or letters).	Nītsīnakīsts.	Nīmasīnahīgana.	Nīnmasīnaīgana.
2. Thy books.	Kītsīnaksīsts.	Kīmasīnahīgana.	Kīmasīnaīgana.
3. His, her books.	Otsīnaksīsts.	Omasīnahīgana.	Omasīnaīgana.
PLURAL.			
<i>Exclusive,</i>			
1. Our books.	Nītsīnaksīnanīsts.	Nīmasīnahīganīnana.	Nīmasīnaīganīnanīn.
<i>Inclusive,</i>			
Our books.	Kītsīnaksīnonīsts.	Kīmasīnahīganīnaua.	Kīmasīnaīganīnanīni.
2. Your books.	Kītsīnaksīnoawasts.	Kīmasīnahīganīwaua.	Kīmasīnaīganīwan.
3. Their books.	Otsīnaksīnoawasts.	Omasīnahīganīwaua.	Omasīnaīganīwan.

Napyoyīs = a house.

SINGULAR.		PLURAL.	
My house	= Nītsapyoyīs.	My houses	= Nītsapyoyīsts.
Thy "	= Kītsapyoyīs.	Thy "	= Kītsapyoyīsts.
His "	= Otsapyoyīs.	His "	= Otsapyoyīsts.
<i>Exclusive.</i>		<i>Exclusive.</i>	
Our house	= Nītsapyoyīšinan.	Our houses	= Nītsapyoyīšinanīsts.
<i>Inclusive.</i>		<i>Inclusive.</i>	
Our house	= Kītsapyoyīšion.	Our houses	= Kītsapyoyīšionīsts.
Your "	= Kītsapyoyīsoawa.	Your "	= Kītsapyoyīsoawawīsts.
Their "	= Otsapyoyīsoawa.	Their "	= Otsapyoyīsoawawīsts.

EXAMPLES OF THE POSSESSIVE CASE.

Animate :—

Nīskûn	= My younger brother.
Néesa	= My elder brother.
Nītûna	= My daughter.
Amoksi mokosiks	= These are my children.
Akekwân oksista etûpoyeo onī	= The girl's mother went to her father.
Aqsītûpī otûna aioqtokoqseo	= The good man's daughter is sick.
Nitoqkeman nītûkomimao	= I love my wife.
Otas iqkonoyeo	= He found his horse.
Aisûkûkomeo okosiks	= He is kind to his children.
Kûqkaiīqsoûqsini kotomitam	= You should feed your dog.

Inanimate :—

Nina okoa	= My father's house.
Tcīma kītseetan	= Where is your saddle?
Amo nokoa	= This is my home.
Amōsts natsikīsts	= These are my boots.
Kītcīnakasem akūsio	= Your waggon is old.
Otsīstotoqsis̄ts awaitcinīmae	= She mends her clothes.

Names of parts of the body beginning with *M*, when put in the possessive case, drop the letter *M* : as,

Miwapsi	= The eye.	Niwapsi	= My eye.
Mokoantsi	= The abdomen.	Nokoantsi	= My abdomen.
Moqkīqīstis̄	= The elbow.	Noqkīnīstis̄	= My elbow.
Maāye	= The mouth.	Naāye	= My mouth.

Some nouns, when put in the possessive case, take the letter *M* as their terminal letter : as,

Manîkûpî = *A young man.*

SINGULAR.

Nîtanîkûpîm = My young man.

Kîtanîkûpîm = Thy " "

Otanîkûpîm = His " "

Exclusive.

Nîtanîkûpîmînan = Our young man.

Inclusive.

Kîtanîkûpîmînon = Our young man.

Kîtanîkûpîmîwa = Your " "

Otanîkûpîmîwa = Their " "

PLURAL.

Nîtanîkûpîmîks = My young men.

Kîtanîkûpîmîks = Thy " "

Otanîkûpîmîks = His " "

Exclusive.

Nîtanîkûpîmînanîks = Our young men.

Kîtanîkûpîmînonîks = Our " "

Kîtanîkûpîmîwaîks = Your " "

Otanîkûpîmîwaîks = Their " "

The Double Possessive.

The following words declined will show the method adopted in forming the double possessive :

SINGULAR.

Noqkoa otometamae = My son's dog.

Koqkoa otometamae = Thy " "

Oqkoye otometamae = His " "

Exclusive.

Noqkunan otometamae = Our son's dog.

Inclusive.

Koqkunon otometamae = Our son's dog.

Koqkoawa otometamae = Your " "

Oqkoyewa otometamae = Their " "

Nisoqkoa	=	My daughter's son.
Kisoqkoa	=	Thy " "
Osoqkoye	=	His " "

Exclusive.

Nisoqkunan	=	Our daughter's son.
------------	---	---------------------

Inclusive.

Kisoqkunon	=	Our daughter's son.
Kisoqkoawa	=	Your " "
Osoqkoyewa	=	Their " "

PLURAL.

Nisoqkoaks	=	My daughter's sons.
Kisoqkoaks	=	Thy " "
Osoqkoyeaks	=	His " "

Exclusive.

Nisoqkunanaks	=	Our daughter's sons.
---------------	---	----------------------

Inclusive.

Kisoqkunonaks	=	Our daughter's sons.
Kisoqkoawaks	=	Your " "
Osoqkoyewaks	=	Their " "

Another form of the same.

SINGULAR.

Nitûna oqkoye	=	My daughter's son.
Kitûna oqkoye	=	Thy " "
Otûna oqkoye	=	His " "

Exclusive.

Nitûninan oqkoye	=	Our daughter's son.
------------------	---	---------------------

Inclusive.

Kitûninon oqkoye	=	Our daughter's son.
Kitûnawa oqkoye	=	Your " "
Otûnawa oqkoye	=	Their " "

PLURAL.

Nitûna oqkoyeks	=	My daughter's sons.
Kitûna oqkoyeks	=	Thy " "
Otûna oqkoyeks	=	His " "

Exclusive.

NĪtūnĭnan oqkoyeks = Our daughter's sons.

Inclusive.

KĪtūnĭnon oqkoyeks = Our daughter's sons.

KĪtūnāwa oqkoyeks = Your " "

Otūnāwa oqkoyeks = Their " "

Decline Nĭsotūna = my daughter's daughter, Nĭtūna otūna = my daughter's daughter, and Nĭtūna okoa = my daughter's house, in the same manner as an exercise.

The Expression "Own."

For the expression "own," "my own," etc., there is a particular form used, consisting of the personal pronoun and Neneta, Keneta, Oneta, joined to the noun.

A letter is inserted in some words in accordance with the laws of euphony.

ANIMATE NOUN.

Nĭstoa Nenetakotas = My own horse.

Kĭstoa Kenetakotas = Thy own horse.

Ostoye Onetakotas = His own horse.

Exclusive.

Nĭstunan Nenetakotasĭnan = Our own horse.

Inclusive.

Kĭstunon Kenetakotasĭnon = Our own horse.

Kĭstoawa Kenetakotasĭwao = Our own horse.

Ostoyewa Onetakotasĭawa = Their own horse.

Nĭstoa Nenetakotasĭks = My own horses.

Kĭstoa Kenetakotasĭks = Thy own horses.

Ostoye Onetakotasĭks = His own horses.

Exclusive.

Nĭstunan Nenetakotasĭnanĭks = Our own horses.

Inclusive.

Kĭstunon Kenetakotasĭncĭnĭks = Our own horses.

Kĭstoawa Kenetakotasĭwawĭjks = Your own horses.

Ostoyewa Onetakotasĭawawĭks = Their own horses.

INANIMATE NOUN.

Nĭstoa Nenetakſistoŭn	= My own knife.
Kĭstoa Kenetakſistoŭn	= Thy own knife.
Ostoye Onetakſistoŭn	= His own knife.

Exclusive.

Nĭstunan Nenetakſistoŭnĭnan	= Our own knife.
-----------------------------	------------------

Inclusive.

Kĭstunon Kenetakſistoŭnĭnon	= Our own knife:
Kĭstoawa Kenetakſistoŭnĭwa	= Your own knife.
Ostoyewa Onetakſistoŭnĭawa	= Their own knife.
Nĭstoa Nenetakſistoaks	= My own knives.
Kĭstoa Kenetakſistoaks	= Thy own knives.
Ostoye Onetakſistoaks	= His own knives.

Exclusive.

Nĭstunan Nenetakſistonanaks	= Our own knives.
-----------------------------	-------------------

Inclusive.

Kĭstonon Kenetakſistononaks	= Our own knives.
Kĭstoawa Kenetakſistoawaks	= Your own knives.
Ostoyewa Onetakſistoawaks	= Their own knives.

Examples.

Nĭstoa Nenetakokoa	= My own home.
Nĭstoa Nenetakſĭnaksĭn	= My own letter.
Nĭstoa Nenetanamau	= My own bow, or gun.
Nĭstoa Notoŭnĭ	= My own knife.

This is a different form for the same inanimate noun as given above.

The accusative case shows the object of the verb.

The accusative animate is expressed by adding *wa* as a suffix to the singular.

Nĭtŭkomimao pukawa	= I love a child.
Akomimeo pukawa	= He loves a child.
Nĭtŭkomimao ponokamĭtawa	= I love a horse.

The accusative plural is formed by adding *a* to the plural as a suffix,
as

Nĭtŭkomimaks pukaksa	= I love children.
----------------------	--------------------

The accusative inanimate is expressed by adding *awa* as a suffix.

Nitûsatciqp sînaksînawa = I read a letter or book; literally, I look at a letter. There is no word in the language to express our English phrase "to read".

Nitâpistotsiqp napyoyîsa = I built a house.

DECLENSION OF NOUN.

Animate Noun.

SINGULAR.

Nom.—Imeta = A dog.

Poss.—Ometa = His dog.

Acc.—Imetawa = A dog.

PLURAL.

Nom.—Imetaks = Dogs.

Poss.—Ometaks = His dogs.

Acc.—Imetaksa = Dogs.

Inanimate Noun.

SINGULAR.

Nom.—Sînaksîn = A letter.

Poss.—Otsînaksîn = His letter.

Acc.—Sînaksînawa = A letter.

PLURAL.

Nom.—Sînaksîsts = Letters.

Poss.—Otsînaksîsts = His letters.

Acc.—Sînaksîtsa = Letters.

Terms of Relationship.

Nina = My father.

Niksîsta = My mother.

Niskûn = My younger brother.

Neesa = My elder brother.

Nisîsa = My younger sister—Nitakim.

(Female speaking)

Ninîsta = My elder sister.

Noqkoa = My son.

Nitûna and Nitûnis = My daughter.

Noma = My husband.

Nitoqkeman = My wife.

Nistûmo = My brother-in-law, *i.e.*, husband of my sister.

Nistûmoqko = My brother-in-law, *i.e.*, brother of my wife.

Nokos = My child.

Nisokos = My grandchild.

Nisoqkoa = My grandson.

Nisotûna = My grand-daughter.

(male speaking).

THE PRONOUN.

A pronoun is a word used instead of a noun.

There are six classes of pronouns—personal, possessive, demonstrative, interrogative, relative, and indefinite.

THE PERSONAL PRONOUN.

Personal pronouns are substitutes for the names of persons or things. They are called personal because they designate the person of the noun which they represent.

INFLEXION OF THE PERSONAL PRONOUN.

	BLACKFOOT.	CREE.	OJIBWAY.
I	Nĭstoa	Niya	Nĭn
Thou	Kĭstoa and Sĭstoa	Kiya	Kĭn
He, she, it	Ostoye	Wiya	Wĭn
<i>Exclusive.</i>			
We	Nĭstunan	Niyanan and Niyan	Nĭnawĭnd
<i>Inclusive.</i>			
We	Kĭstunon	Kiyanan	Kĭnawĭnd
You	Kĭstoawa	Kiyawa	Kĭnawa
They	Ostoyewa	Wiyawa	Wĭnawa

There is a peculiarity in the pronoun especially observable in the Ojibway, Cree and Blackfoot languages, namely the *double first person plural*. This has already been explained under the *exclusive* first person plural and *inclusive* first person plural. As this is a highly important distinction, which ensures definiteness of expression, I shall repeat the explanation in another form, even at the expense of redundancy.

In the *exclusive* first person plural *Nĭstunan*, the persons speaking do not include the second persons, that is the persons addressed. This exclusive plural includes only the first and third persons, viz.:—He and I; or, They and I.

The *inclusive* first person plural or second first person plural *Kĭstunon*, includes the persons addressed, and not the third persons, viz.:—Thou and I; or, You and I. Great care must be exercised in grasping intelligently and thoroughly this distinction, as it is very extensively used in the language, especially in the verb.

The personal pronoun is used with verbs in a contracted form.

In the singular number, the first and second personal pronouns are used as prefixes, and are called article pronouns.

Nīstoa being contracted to N and Nī, and Kīstoa to K and Kī.

In accordance with the laws of euphony, inducing harmony of sound, the letter *t* is oftentimes inserted between the pronominal prefix or article pronoun and the tense root of the verb, and sometimes before the root of the verb itself, as

Nī-t-awan-ī = I say.

Nī-t-an-ī = I said.

Kī-t-awan-ī = Thou sayest.

Kī-t-an-ī = Thou saidst.

awan-īo = He says.

an-īo = He said.

Sometimes the contracted form of the third personal pronoun is attached to verbs, with the aid of a euphonic letter, as O-t-se-kamus-īo = He stole. Generally, however, the third person of the verb has not any article pronoun, the person being fully expressed by the inflexion of the verb.

The Expression Self.

For the expressions *self* and *selves* the particle *kauk* is added as a suffix to the personal pronouns, as:

Nīstoakauk = Myself.

Kīstoakauk = Thyself.

Ostoyekauk = Himself, herself, itself.

(*Exclusive*) Nistunanakauk = Ourselves.

(*Inclusive*) Kistunonakauk = Ourselves.

Kīstoawakauk = Yourselves.

Ostoyewakauk = Themselves.

THE POSSESSIVE PRONOUN.

Possessive pronouns receive their distinctive name from the idea of possession being inherent in them.

There are two classes of possessive pronouns: separable and conjunctive.

The *separable* possessive pronouns are not joined to another word, but stand alone, although related to other words in the same sentence.

In the plural number they agree with the animate and inanimate nouns which they represent.

When representing a noun in the singular number, the animate and inanimate forms are alike.

	BLACKFOOT.	OJIBWAY.
Mine	Nītsinan	Nin
Thine	Kītsinan	Kin
His, hers, its <i>Exclusive.</i>	Otsinan	Win
Ours <i>Inclusive.</i>	Nītsinan	Ninawind
Ours	Kītsinanon	Kinawind
Yours	Kītsinanawa	Kinawa
Theirs	Otsinanawa	Winawa

Animate Form.

Mine	=	Nītsinanīks.
Thine	=	Kītsinanīks.
His, hers, its	=	Otsinanīks.
<i>(Exclusive)</i> Ours	=	Nītsinananiks.
<i>(Inclusive)</i> Ours	=	Kītsinanoniks.
Yours	=	Kītsinanawaks.
Theirs	=	Otsinananiks.

Inanimate Form.

Mine	=	Nītsinanīsts.
Thine	=	Kītsinanīsts.
His, hers, its	=	Otsinanīsts.
<i>(Exclusive)</i> Ours	=	Nītsinananists.
<i>(Inclusive)</i> Ours	=	Kītsinanonists.
Yours	=	Kītsinanawasts.
Theirs	=	Otsinananists.

For the expression *All these are mine*, the pronoun *Nītsinanā* is used, which is declined in the same manner as Nītsinan.

Conjunctive possessive pronouns are joined to nouns, and thus are formed nouns in the possessive case. These are the same as the contracted forms of the personal pronouns, which are used as article pronouns. They are thus expressed in conjunction with nouns and verbs:

1st person—N, Ni, Nit, Nits, and other vowels united with N.

2nd person—K, Kì, Kìt, Kìts, also Ko, Kù, etc.

3rd person—O, Ot, Ots.

Examples of the conjunctive possessive pronouns will be found in the treatment of the declension of the noun in the possessive case.

The following examples will also show the true meaning :

Puqsìpìpotot nìsokasìm = Bring my coat.
 Puqsìpìpes notasa = Bring my horse.
 Noqkokìt nìtsopatsìs = Give me my chair.

THE DEMONSTRATIVE PRONOUN.

The demonstrative pronouns point out distinctively the persons or things spoken of. There are two forms, viz.: animate and inanimate.

	BLACKFOOT.	CREE.	OJIBWAY.
ANIMATE.			
This.	Amo and Amoía.	Awa.	Â.
That.	Oma.	Ûna.	Â.
This or that.	Anauk.		
These.	Amoksì and Amoksìm.	Okì.	Ogaw.
Those.	Omeksì and Omeksìk.	Ûnikì.	Ìgìo.
These or those.	Anìksauk.		
INANIMATE.			
This.	Amo and Amoía.	Oma.	Aw.
That.	Omem.	Ûnima.	Ìo.
This or that thing.	Anìmauk.		
These.	Amosts and Amostsìm.	Ohì.	Onaw.
Those.	Omests and Omestsìm.	Ûnikì.	Ìnìo.
These or those things.	Anìstsauk.		

Examples of the Animate Demonstrative.

Amo notas = This (is) my horse.
 Amoksì notasìks = These (are) my horses.
 Amoksì imetaks = These dogs.
 Amakekwân = This girl.
 Omeksì ponokamìtaks = Those horses.
 Oma matùpì skunatapìo = That person is strong.

Examples of the Inanimate Demonstrative.

Amo nitsapyoyĩs	= This (is) my house.
Amanakas	= This wagon.
Amosts matakĩsts	= These potatoes.
Omests sĩnaksĩsts	= Those letters.

THE INTERROGATIVE PRONOUN.

Interrogative pronouns are those which are used for asking questions.

	BLACKFOOT.	CREE.
ANIMATE.		
(<i>Sing.</i>) Who	Tũkȧ	Awena
Which	Tȧȧ	Keko
Who is he	Tũkats	
(<i>Plu.</i>) Who	Tũkaks	Awenĩkĩ
Which	Tciaks	Tanũnĩkĩ
INANIMATE.		
(<i>Sing.</i>) Which	Tcia and Tcima	Keko and Tanĩma
What	Ūqsa	Kekwaĩ
What	Tcanĩstapĩ	
What is it	Tcanĩstapsĩo	
(<i>Plu.</i>) Which	Tciasts	Taniwĩhĩ
What	Tcȧȧ	Kekwaya

Examples.

Tcakĩtawanĩ = What dost thou say? (present tense).

Tcakĩtanĩ = What dost thou say? What didst thou say?

This latter (imperfect tense) form is used more frequently by the Indians, instead of the present tense, but it has the force of the present.

Tcawanĩo = What does he say?

Tuka kĩtũqkoka = Who gave you?

Tcanĩstaoats = What did he say?

THE RELATIVE PRONOUN.

Relative pronouns serve to connect the clause of a sentence with its antecedent, and to describe or modify it.

<i>Animate.</i>	SINGULAR.	PLURAL.
Who.	Anúk.	Anúksisk.
<i>Inanimate.</i>	SINGULAR.	PLURAL.
Which.	Anik.	Anistsisk.
What.		

The particles *oqpi* and *yiqpi* are used as suffixes to express the relative *what*, as :

Anioats nítúqkoyiqpi = Did he say what he gave me?
 Nítúksiniq kítúqkotoqpi = I know what I gave you.

The compound relative pronoun *whoever* is expressed by the particle *íst*, as when alone

Ístaowa = Whoever.
 Ístútomae matsisae = Whoever wants (this house) can have it.
 Ístaowa úqkítotasin = Whoever wants this horse can have him.

THE INDEFINITE PRONOUN.

Indefinite pronouns represent objects indefinitely. These pronouns have animate and inanimate forms, and are separable and conjunctive.

Animate and Separable.

Ínúqkae = Somebody.
 Akaiem = Many.
 Noqketsim = Another, a different one.
 Istciki = Another, an added one, *plural* Istcikiks.
 Ínatoqsi = Few.
 Matoqketse = Still another.

Inanimate and Separable.

Akao = Many and much.
 Aietcínika = All.
 Noqketsim = Another.
 Istciki = Another, *plural* Istcikiks.
 Nítapi = Another, the other.
 Matoqketse = Still another.

There are conjunctive indefinite pronouns which are used only when joined to a word, as

Kûna = All, *e.g.*, Kûnaitûpîks = All the people.

Kûnoanistcîsa = Tell everyone to come.

Noqketse = Another, *e.g.*, Noqketsetûpî = Another person.

THE ADJECTIVE.

An adjective is a word used to qualify nouns.

There are four classes of adjectives, viz., separable, conjunctive, verbal and numeral.

There are also two forms of the adjective, animate and inanimate, agreeing with the nouns which they represent.

Separable Adjectives.

Aqse	= Good.	Sokape	= Perfect.
Matûqse	= Bad (evil).	Makape	= Dirty—rotten. also applied to wrong-doing.
Omûqkîme	= Big.	Înakîme	= Little.
Spiké	= Thick.	Stoyé	= Cold.
Ksîstoyé	= Warm.	Soksîmé	= Heavy.

Inakime=little, becomes when joined to nouns the diminutive *înak*.

Separable adjectives are sometimes contracted in form and united with nouns, as

Aqsokîtsîpupî	= Good heart.
Omûqkîapyoyîs	= A big house.
Omûqsînina	= A great chief.
Makapoqsokoyî	= The dirty road, the evil way.

Omûqkokaio = a big bear, from Omûqkîmi, big, contracted to Omûqko and Kaio = a bear.

Conjunctive Adjectives.

Conjunctive adjectives are joined to nouns and verbs. When severed from their proper connection, they lose their meaning and cannot be translated, as :

Mane = new or young. *Manepuka* = a young child, an infant. *Manepuka aikamotao* = the infant is better. *Kokinan manyoskitsipûpi* = give us new hearts.

Nato = Holy. *Natoapsinaksin* = the holy book, *i.e.*, the sun-book, the Bible. *Natoapekwân* = the holy man, a missionary. *Natoyetci-stcikwi* = the holy day, the Sabbath. This adjective is derived from *natos* = the sun, which is applied to spiritual things in the sense of being holy. Thus *Natoapikwan* is composed of *natos*, the sun, *api*, the contracted form in word formation of *matûpi*, a person, and *kwân*, the singular personal ending.

The separable adjectives are capable of being verbalized by the addition of the verbal suffix, and become adjective verbs, as :

Aqse = Good.	Aqseo = It is good.
Matûqse = Bad.	Matûqseo = It is bad, <i>i.e.</i> , it is not good, <i>ma</i> being the negative particle.
Makape = Bad.	Makapeo = It is bad.

He is wicked (moral badness).

Omûqkime = Big.	Omûqkimeo = It is big.
Inakime = Small.	Inakimeo = It is little.
Sokape = Perfect.	Sokapeo = It is perfect.
Stoye = Cold.	Stoyeo = It is cold.
Ksistoye = Hot.	Ksistoyeo = It is hot.
Spike = Thick.	Spikeo = It is thick.
Akaise = Old.	Akaiseo = It is old.
Matcaps = Foolish.	Matcapseo = He is foolish.
Kimataps = Poor.	Kimatapseo = He is poor.
Aioqtokos = Sick.	Aioqtokoseo = He is sick.
Skunataps = Strong.	Skunatapsio = He is strong.
Akotcaps = Rich.	Akotcapseo = He is rich.

Comparison of Adjectives.—Adjectives have three degrees of comparison, the positive, comparative and superlative. The positive degree expresses the adjective in its simple form, as

Stoye = Cold.	Aqse = Good.
---------------	--------------

The comparative degree is formed by adverbial prefixes which are variously contracted. The particles attached to the adjectives are, E, Ek, Ekî, Eks, Ekû, Ekû, as :

Ekstoye = Very cold, colder.
Ekskaqse = Very good, better.
Ekskumataps = Very strong, stronger.

The superlative degree is formed by prolonging the adverbial prefix of the comparative degree, as :

Ekstoye	= Coldest, extremely cold.
×	
Ekskaqse	= Best, the highest good.
×	
Ekskunataps	= Strongest, the greatest strength.
×	

Examples :

Akaiem	= Many.
Ekûkaiem	= Very many.
Ekûkaiem	= The most, the greatest number, a very great number.
×	
Akאו	= Much.
Ekûkauo	= Very much.
Ekûkauo	= Very much.
Ekûkauo	= The most, the greatest.
×	

There is a negative form of the adjective expressed by prefixing the negative particles *Ma* and *Matsi*, as :

Epoyapetsi	= A great talker.		
Matsipoyapetsi	= A silent person.		
Aqse	= good.	Matûqse	= Bad.
Skunataps	= Strong.		
Matskunataps	= Not strong, weak.		

Numeral Adjectives.

CARDINALS.

Nitukskûm	= One.	Nao	= Six.
Natokûm	= Two.	Ikîtecka	= Seven.
Niokskûm	= Three.	Nanisoyîm	= Eight.
Nisoyîm	= Four.	Naniso	= “
Nise	= “	Pikso	= Nine.
Nîsetcî	= Five.	Kepo	= Ten.
Nîseto	= “	Kepî	= “
Kepî Nîteakupût	= Eleven.	Natsîpe Nîsikupût	= Twenty-one.
“ Natseakupût	= Twelve.	“ Natsîkupût	= Twenty-two.
Kepî Niokupût	= Thirteen.	“ Niokupût	= Twenty-three.

Kepi Nisokupût	= Fourteen.	“ Nisokupût	= Twenty-four.
“ Nisetçikupût	= Fifteen.	“ Nisetçikupût	= Twenty-five
“ Naokupût	= Sixteen.	“ Naokupût	= Twenty-six.
“ Ikıtcekupût	= Seventeen.	“ Ikıtcekupût	= Twenty-seven.
“ Nanisokupût	= Eighteen.	“ Nanisokupût	= Twenty-eight.
“ Piksokupût	= Nineteen.	“ Piksokupût	= Twenty-nine.
Natsıpe	= Twenty.		

Niıpe	= Thirty.	Ikıtçıpe	= Seventy.
Nisıpe	= Forty.	Nanııpe	= Eighty.
Nısetçıpe	= Fifty.	Piksıpe	= Ninety.
Naoıpe	= Sixty.	Kepıpe	= One hundred.

Kepıpe kī Nıtsekupût	= One hundred and one.
“ “ Nısetçikupût	= One hundred and five.
“ “ Kepo	= One hundred and ten.
“ “ Natsıpe	= One hundred and twenty.

Natoka	kepıpe	= Two hundred.
Nioksa	“	= Three hundred.
Nıso	“	= Four hundred.
Nısito	“	= Five hundred.
Nao	“	= Six hundred.
İkıtceka	“	= Seven hundred.
Nanıso	“	= Eight hundred.
Pikso	“	= Nine hundred.
Kepıpepe		= One thousand.
Nanıso	kepıpepe	= Eight thousand.
Kepi	“	= Ten thousand.
Niıpe	“	= Thirty thousand.

In reckoning from eleven to twenty Kepi is generally unused, and the simple form is then :

Nıtsekupût	= Eleven.
Natsekupût	= Twelve.
Niokupût	= Thirteen, etc., etc.

Some of the numerals have two and three words for the same number, as :

Two	=	Natokûm	and	Natoka.
Three	=	Niokskûm	"	Niokska.
Four	=	Nisoyîm	"	Niso.
Five	=	Nîsetcî	"	Nîsito.
Ten	=	Kepo	"	Kepî.

There is a form of broken speech also in use in reckoning, as :

Kepî mîstaput nîsetcî = Fifteen.

Kepî mîstaput nao = Sixteen.

Kepîpe naokupûtîpî mîstaput nîsetcî = One hundred and sixty-five.

Numerals are generally combined with nouns, though they are separable adjectives, as :

Nîtsepoqse	=	One dollar.	Naotûpe	=	Six persons.
Niokskotas	=	Three horses.	Īkîtcetûpe	=	Seven "
Nîtsetûpe	=	One person.	Nanisotûpe	=	Eight "
Natsetûpe	=	Two persons.	Piqsotûpe	=	Nine "
Niokskatûpe	=	Three "	Kepîtûpe	=	Ten "
Nîsotûpe	=	Four "	Nîsoqkûtseo	=	Four feet.
Nîsetcîtûpe	=	Five "			

Nîtsînoaîaks nanisoyîmîao ponokamîtak = I saw eight horses. Kepî notasîks = I own ten horses. Literally—*ten, my horses*. This is the mode of expressing possession in use among the Indians.

Tcanîstcîsa kîtakotoqpa = When will you return? Nao tcîstcîkwîsts nûqsîkûmîtoto = Perhaps I shall return in six days.

The natives generally use the term *nights* where the white men say *days*, but the advent of the white man has introduced modes of speech when speaking to white men, which are not employed by the natives when in conversation among themselves.

Natokae tcîstcîkwee nîtapautakî kî nîsoyîmî sûpoksîks notoqkwenanî = I worked two days and earned four dollars.

Etcîpustoyemîo akapyoyis = He lived in town ten years.

Nîtukskûmats = Is there one? Kepîoats = Are there ten?

MULTIPLICATIVE NUMERALS.

Nitukskaowa = Once.	Naoyaowa = Six times.
Natokaowa = Twice.	Īkītcekayaowa = Seven “
Niokskaowa = Three times.	Nanīsoyaowa = Eight “
Nīsoyaowa = Four “	Piksoyaowa = Nine “
Nīsītoyaowa = Five “	Kepoyaowa = Ten “
Keṗī nītsīkupūtoyaowa = Eleven times.	
“ natsīkupūtoyaowa = Twelve “	
“ niokupūtoyaowa = Thirteen “	
“ nīsokupūtoyaowa = Fourteen “	

All the other multiplicative numerals are formed on the same plan by adding *yaowa* to the contracted forms of the cardinal numbers.

Tcanītco kitsītūpoqsīststcī akapyoyis = How many times did you go to town? Nīsoyaowa nītsītūpoqsīstcī = I went four times.

Ordinals.

Petsīstoye = First.	Omoqsīsītūqp = Fifth
Omoqsīstokūqp = Second.	Omoqtaoqp = Sixth.
Omoqsoqskuqp = Third.	Omoqtokītcekūqp = Seventh.
Omoqsīsoqp = Fourth.	Omoqtanīsoqp = Eighth, etc.

Numerical Combinations.

Aq and Aqk when used in combination with a number mean *perhaps*, as :

Aqkītuskūm = Perhaps there is one.
Aqsīstokūm = Perhaps there are two.
Aqsokskūm = “ “ three.
Aqsīsoyim = “ “ four.
Aqsīsīto = “ “ five.
Aqkao = “ “ six.
Aqkītcekūm = “ “ seven.

The other combinations are formed on the same plan.

Name combined with numbers signifies *only*.

Nametukskūm = Only one.	Namao = Only six.
Namestokūm = “ two.	Namoqkītcekūm = “ seven.
Nameokskūm = “ three.	Namanīsoyim = “ eight.
Namesoyīm = “ four.	Namepiqso = “ nine.
Namesīto = “ five.	Namekepo = “ ten.

There is another method of expressing this phrase, as :

Aistokûm = Only two. Aiokskûm = Only three, etc.

Numerical Expressions of Time.

Stoye = Winter. Nepoyî = Last summer.

Ïstoyîšî = Next winter. Mokoye = Autumn.

Akûtstoye = Last winter. Motoye = Spring.

Nepus = Summer.

Nîtukska stoye = One winter or one year.

Nîtukska natosî = One month.

Tcanîstceo = What time is it?

Kûtaumûspiksîstcîko = Is it early in the day?

Tcanîstconî kesomî = How old is the moon?

Anokî tcîstcîko = Half a day.

Sûpokšî tcîstcîko = A whole day.

Ïnûkanauksî tcîstcîko = One fourth of a day.

Natos = the sun. This is often used in common for *the moon*, and for *a month*.

The natives have names for the months peculiar to themselves, as :

Pûke-pîstce = Choke-cherry month.

Saatos = The month the ducks arrive.

Saaksîstûpo = The month the ducks depart.

Omûqkopotao = The month of the big snow.

Anuqk = Now.

Anuqk tcîstcîkwe = To-day.

Kokose = Night.

Kokoye = Last night.

Anuqk kokose = To-night.

Âtakose = Afternoon.

Ototcîkûqtcîstcîkwe = Noon.

Apînakwûs = To-morrow.

Matunye = Yesterday.

Matunyîs = To-morrow.

Mîstapatunye = Day before yesterday.

Mîstapîapînakwûs = Day after to-morrow.

Apīnako	= To-morrow at daybreak.
Tcīstcikenûts	= Daylight.
Askenûts	= Darkness.
Kĩskĩnatunye	= Sunrise.
Aisokûtoyetcīstcīkwe	= Sunday is ended.

Numerical Expressions of Money.

Mikskĩm	= Metal, a general term for money.
Ītūqpumope	= The thing to trade with, money.
Nĩsapoqse	= One dollar.
Natokūm sapoqse	= Two dollars.
Omuqkūnauks	= The large half—fifty cents.
Īnūkūnauks	= The small half—twenty-five cents.

Nioksa Īnūkūnauks = The three small halves—seventy-five cents.
 Omūqkūnauks ke ĩnūkūnauks = The large half and the small half—
 seventy-five cents. Aipūnasaine = A term for five and ten cents;
 literally, the thing to cry over at night, and in the morning the weeping
 is at an end. The natives explain this term by saying that the piece of
 money is so small that when they look at it at night they begin to weep;
 and in the morning, when they again look at it, they say it is foolishness
 to weep over such a small thing, and they cease crying. Sūpoksĩ, the
 term for one dollar, means a whole thing.

THE ADVERB.

There are several kinds of adverbs, which are classified according to
 their signification.

Adverbs of Time.

Anuqk	= Now.
Kĩnuqka	= And now. Just now.
Anuqk tcīstcīkwe	= To-day.
Anuqk kokose	= To-night.
Ātakose	= Afternoon.
Matomoqts	= Formerly. Some time ago.
Mĩsamoe	= Long ago.
Matomaisūmo	= Not long ago.
Matcīsūmo	= “ “ “
Ūniqka	= Then. At that time.

Sakooqts	= Afterwards.	By and bye.
Matunyis	= To-morrow.	
Apinakwits	=	"
Matunye	= Yesterday.	
Aisûmoye	= Long ago.	
Kipe	= Soon.	In a short time.
Sake	= Still.	
Oké	= Already.	

Aksk, an adverbial particle = much, as *akskaisotao* = It will rain heavily. Ako = much, as *akoawûqsin* = plenty to eat.

Adverbs of Place.

Tcima	= Where.	Astooqts	= Near.
Nats	= "	Astceo	= Near.
Tcia	= "	Pieqtce	= Far off.
Anom	= Here.	Pio	= " "
Kiñom	= Just here.	Spoqt	= Above.
Oma	= There.	Spoqtcim	= "
Oma	= Yonder.	Stûqts	= Below, under.
^x Omém	= There.	Stûqtcim	= " "
Matomoqts	= Before.	Saoqts	= Outside.
Aptûoqts	= Behind.	Saoqtcim	= "
Pistoqts and Pistoqtcim			= Inside.
Satoqts and Satoqtcim			= Across.
Osoqts and Osoqtcim			= Backwards.
Sapoqts and Sapoqtcim			= Sidewards.
Etomoqts			= Forward.
Sakooqts and Sakooqtcim			= After.
Etcinastceo			= Everywhere.
Matsikiowats			= Nowhere.
Apûmoqts and Apûmoqtcim			= Across the river.
Ametoqts and Ametoqtcim			= Up the river, westward.
Pinapoqts and Pinapoqtcim			= Down the river, eastward.
Amiskapoqts and Amiskapoqtcim			= Southward.
Apûtûsoqts			= The north. Northward.
Kiomí			= There.
Kia			= Come on.
Kûke			= Go on.

Adverbs of Interrogation.

Tcanĩstce	=	When was it?
Tcanĩstcĩs	=	When will it be?
Tcanĩstcĩsũmo	=	How long ago?
Tcanitcĩm	=	How many?
Tcanitcaw	=	How much?
Tcanistcĩpio	=	How far is it?
Tcanĩstcĩtũpĩ	=	How many people?
Tcĩma	=	Where.
Nats	=	"
Ūnats	=	"
Tcaa	=	"
Ūqsa	=	"

Adverbs of Quantity.

Akaiem	=	Many.	Ĩnatoqtseo	=	Less.
Akao	=	Much.	Ūnyae	=	Enough.
Matakaiem	=	Few.	Ĩstcike	=	More.
Matakauo	=	"	Anaukoqts	=	Half.
Pĩstcĩkwe	=	Little	Aitcĩnika	=	All.
Ĩnakotsĩs	=	"			

Adverbs of Manner.

Sapũnistce	=	Collectively.
Netoyé	=	Alike.
Makape	=	Badly, wrong.
Hũné	=	In that manner.
Ekska	=	Very.
Noqketcĩm	=	In another way, differently.
Kipé	=	Quickly.
Ksĩstoqts	=	Freely, without favour.
Ksĩstape	=	Aimless, fruitless.
Ekĩne	=	Slowly, gently.

Adverbs of Comparison.

Akao and Ĩstcike = More.

Adverbs of Affirmation.

Ū	= Yes.
Emani	= That is true, truly.
Hûné	= That is it.
Netseo	= That is so.

Adverbs of Negation.

Sa	= No.
Matcístci	= None at all.
Maqkakanístce	= It is not so.

Adverbs of Uncertainty.

Tcaqta	= Perhaps.
Matûstcîniq	= “

The prepositions are almost invariably joined with the noun or verb, and are in this sense particles or inseparable prepositions. Prepositional particles are generally incorporated with the verb, not as a prefix, but immediately after the pronomial particle and before the tense root. The following prepositional particles are found along with others in the language :

Sûp = Into. Mut = From, with. Itûqk = Upon, as :

Anakas *itûqk*-ítaupio = He sits upon the wagon.

Akapyoyis *nimûtoto* = I have come from town.

Nitûqsítaupio = I am sitting upon.

Anim = In, as : Anim Akapyoyis = In town. Itsoiqtce = In the water.

Potoq = To the place, as : Etokûtceo = He sent him. Etopotoqkutceo =

THE CONJUNCTION.

Kĭ = And, but.

Sometimes the conjunction is joined to another word, as :

Kîniqka = And then.

Kioto = And he came, but he came.

Tûka = Because.

INTERJECTION.

Hau! Hau!	= A form of salutation.
Kika	= Wait!
Okĩ	= Now! Come on!
Ekakima	= Courage!
Mápet	= Be quiet!
Ma	= Here! Take this!
Moayok	= Here it is!
Aia	= Oh! an expression of pain, used only by females.
Místaput	= Get away from here! Go away!
Satcĩt	= Look!

(To be Continued.)
