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ANNUAL REPORT  
OF THE  
CANADIAN INSTITUTE  
SESSION 1887-8.

BEING PART OF APPENDIX L.

TO THE

REPORT OF THE MINISTER OF EDUCATION, ONTARIO,  
1888.

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Printed by Order of the Legislative Assembly.

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TORONTO:  
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1889.

ANNUAL REPORT

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(2) Architectural

(3) Philological

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Clay Pipes

Stone Pipes

Implements

Bone.....

Shell.....

Flints.....

Carved Heads

Tablets.....

Copper.....

CONTRIBUTIONS

NEWFOOT

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The Council  
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ANNUAL REPORT OF THE COUNCIL OF THE CANADIAN INSTITUTE—  
SESSION, 1887-88.

The Council of the Canadian Institute has the honour to lay before the members its Thirty-Ninth Annual Report :

Early in the past Session the President, Mr. W. H. Vander Smissen, to whose exertions so much of the increased activity and prosperity of the Institute were due, was unfortunately obliged, through the pressure of other duties, to resign, and the Vice-President being at the time absent in Europe, Mr. Charles Carpmael was elected to fill the vacant position. Twenty-six meetings, including the annual conversazione, have been held during the past session, at which thirty-nine papers have been read, in addition to fifty read at Section meetings. The aggregate number of papers read thus exceeds by seventeen that of the preceding year, when there were but seventy-two, and this number was again largely in excess of that of any previous year in the history of the Institute. The character of these communications has been fully equal to the standard of previous years, and the range of subjects (as shown in the appendix) has been unusually large. The average attendance at the regular weekly meetings has also shown an increase. It is also satisfactory to notice that there has been a considerable increase in the number of members who have made use of the reading-room. On the occasion of the annual conversazione, the Museum of Natural History and Archæology was opened, and there was an excellent exhibition of photographs by the Photographic Section. There was a large attendance of members and their friends. The Archæological collection is already extensive, and has been admirably arranged by the Curator, to whom the Institute is greatly indebted for his exertions, both in collecting specimens and in carefully classifying them. The Archæological Report, which has been bound up with the Annual Report of the Institute for the year 1886-87, is already in the hands of the members, and contains an account of what has been done by the Institute down to December last, in this field. Our exertions to add to our collection continue unabated, and the Council has thankfully to acknowledge the grant of \$1,000 by the Ontario Government, which will enable us to devote a considerable sum, as in the past year, to this purpose. The number of books and pamphlets received during the year, is shown in Appendix III, to have continued to increase, and to have been considerably more than eight times as large as it was five years ago. A pamphlet has been prepared by Mr. Sandford Fleming, on the subject of "Time Reckoning," and issued by the Institute for the purpose of introducing the subject, in the educational institutions throughout the Dominion. In this pamphlet the principles of time-reckoning are set forth, with special reference to the recommendations of the Washington conference on the subject. A deputation of the Council of the Institute has waited upon the Minister of Education of the Province of Ontario, and acting on the recommendation of this deputation, the Minister has requested to be furnished with five hundred copies of the pamphlet, for distribution to the head masters of the various high schools and collegiate institutes in the Province. The Council has also sent copies of the pamphlet to the Ministers of Education in the other Provinces. It will be remembered that it was a paper by Mr. Sandford Fleming, read before this Institute, copies of which were forwarded with a memorial from the Institute to the Marquess of Lorne, then Governor-General of the Dominion of Canada, and through him to the British Government, and to various foreign scientific institutions, which first called prominent attention throughout the world to this subject. The views then advanced by Mr. Sandford Fleming, were very generally accepted by scientific men in all civilized nations, the subject was discussed at various congresses, and in October, 1884, a conference was held at Washington on the invitation of the President of the United States, at which twenty-five nations were represented, and the proposed reforms were by it recommended for adoption by all

nations. Your Council has every reason to hope that the pamphlet now issued will facilitate the introduction of these reforms in Canada. A memorial was also forwarded to the Minister of the Interior in connection with Geological and Mining affairs, and in reply a certified copy of a report of a committee of the Honorable the Privy Council, approved by his Excellency the Governor-General in Council on the 28th September, 1887, has been received, in which it is set forth that a Division of the Geological Branch of the Interior has recently been organized by the appointment to the permanent staff of the Survey, of a Mining Engineer and a Mining Geologist, to examine and report upon the mining industries of the Dominion, to collect mineral statistics, and otherwise to work out the economic geology of our mining districts. While congratulating the Institute on the increase in membership and activity, the Council feels it necessary to impress upon the members that much has yet to be done in the direction of the further extension of the Museum and Library. Our accommodation in these is still inadequate, and additional shelving and cases are required. The balance shown on our balance sheet is already expended. It therefore urges upon the members the necessity of supporting the present efforts of the Committee of Ways and Means by every means in their power, by contributions, by presenting the claims of the Institute to the public in every possible way, and by endeavoring to obtain new members. During the past year the Institute has lost by death one of its most distinguished honorary members, Prof. Balfour Stewart, of Owen's College, Manchester. Balfour Stewart's name was first prominently brought before the public by his researches on radiant heat, published in 1858. In 1859 he was appointed Director of Kew Observatory, and held this post until 1870, when he was appointed Professor of Physics at Owen's College, Manchester. He died of apoplexy on December 18, 1887.

CHARLES CARPMAEL,  
*President.*

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APPENDIX I.

*Membership.*

Number of Members April 1, 1887 .....	290
Withdrawals and deaths during the year .....	27
	263
Elected during the year .....	56
Total members, April 1, 1888 .....	319
Composed of :	
Honorary Members .....	6
Life Members .....	12
Ordinary Members .....	301
	319
Associates .....	54

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## APPENDIX II.

*Treasurer in Account with the Canadian Institute for the Year Ending March 31st, 1888.*

## To Summary :—

" Balance on hand .....	\$56 40
" Annual Subscriptions .....	909 75
" Rents .....	206 50
" Government Grant .....	1,000 00
" Journals sold .....	7 15
" Periodicals sold .....	38 80
" Donation .....	2 50
" Interest .....	1 14
" Proceeds of Note .....	200 00
	<u>\$2,422 24</u>

## By Summary :—

" Salaries .....	\$314 00
" Printing Journal .....	813 27
" " Miscellaneous .....	59 00
" Stationery .....	2 00
" Postage .....	78 85
" Freight and Express Charges .....	13 53
" Repairs .....	36 64
" Gas .....	40 75
" Water .....	24 00
" Periodicals .....	120 76
" Furniture .....	11 15
" Housekeeping .....	43 80
" Fuel .....	20 75
" Insurance .....	52 00
" Blinds .....	10 00
" Gas Lights .....	19 20
" Taxes .....	9 75
" Journals purchased .....	2 50
" City Directory .....	3 00
" Chemicals for Museum .....	8 53
" Grant to Photographic Section .....	40 00
" Sundries .....	8 00
" Interest .....	218 00
" Promissory Note .....	300 00
" Balance, Imperial Bank .....	163 56
" " on hand .....	9 20
	<u>\$2,422 24</u>

Bank Balance as per Bank Book .....	\$273 67
Balance as above .....	\$163 56
" for Building Fund .....	110 11
	<u>273 67</u>



*Building Account.*

1887.			
April 1, to	Balance .....	\$662 83	
1887.			
April 29th,	By Carpenters Contract, Certificate No. 3,...	\$32 75	
May 5th,	" Painters " " " 1,...	113 40	
Nov. 18th,	" Plasterers " " " 1,...	41 80	
Oct. 16th,	" Roofers " " " 1,...	25 00	
May 17th,	" Contract for Cases.....	\$ 50 00	
Oct. 24th,	" " .....	75 00	
	" " .....	100 00	
Nov. 16th,	" " .....	65 00	
			290 98
Dec. 16th,	" Law Expenses .....		3 64
1888.			
Jan. 13th,	" Carpenters Account for Alterations and Shelves .....		45 15
	" Balance in Imperial Bank.....		110 11
			<u>\$662 83</u>

*Archaeological Grant.*

To Grant, 1887 .....	\$1,000 00
By Grant to Fort Rouille monument .....	\$200 00
" Purchase of Specimens .....	235 50
" Engraving of Specimens for Report.....	134 55
" Travelling expenses, sundry expenses and remuneration of the Curator .....	394 50
" Balance on hand .....	35 45
	<u>\$1,000 00</u>

(Signed)

W. A. DOUGLASS, }  
ALFRED BAKER, } *Auditors.*

*Assets.*

Building .....	\$11,500 00
Warehouse .....	720 00
Ground.....	3,000 00
Library .....	5,500 00
Specimens .....	2,000 00
Personal property.....	1,000 00
	<u>\$23,720 00</u>

*Liabilities.*

Mortgage No. 1, due 1892.....	\$3,000 00
" 2, " 1892.....	1,000 00
Note discounted.....	200 00
Balance in favour of the Institute.....	19,520 00
	<u>\$23,720 00</u>

*Donations*  
April 1st,  
466; Indi  
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## APPENDIX III.

*Donations and Exchanges.*—Books and Pamphlets received from April 1st, 1887, to April 1st, 1888 :—From Canada, 229 ; United States, 503 ; Great Britain and Ireland, 466 ; India and Australasia, 90 ; all other countries, 1,045. Total, 2,333.

Total number received in 1882-3, 280 ; in 1883-4, 800 ; in 1884-5, 730 ; in 1885-6, 1,502 ; in 1886-7, 2,230 ; in 1887-8, 2,333.

## APPENDIX IV.

The number of Societies and Publications with which the Institute exchanges is 396

## APPENDIX V.

The Periodicals subscribed for are the same as last year, with the addition of the *Amateur Photographer*.

## APPENDIX VI

Classification of papers read by subjects :—Anthropology, 3 ; Archæology, 1 ; Biology, 2 ; Botany, 1 ; Chemistry, 1 ; Economics, 4 ; Geology, 4 ; Geography, 2 ; Jurisprudence, 1 ; Medicine, 1 ; Metallurgy, 1 ; Meteorology, 1 ; Philology, 4 ; Political Science, 3 ; Psychology, 1 ; Sociology, 1 ; Solar Physics, 1 ; Telegraphy and Telephony, 1 ; Zoology, 4 ; Miscellaneous, 2. Total, 39.

Read at Section Meetings :—Architectural Section, 12 ; Biological Section, 22 ; Geological and Mining Section, 6 ; Philological Section, 10. Total, 50.

## REPORTS OF SECTIONS OF THE CANADIAN INSTITUTE, 1887-8.

(1) *Report of the Biological Section.*

The Biological Section of the Canadian Institute has held its regular meetings on the 1st and 3rd Mondays in every month during the past session. At each of these meetings one or more original papers have been read on a variety of topics, as may be seen on reference to the programmes issued.

The "Microscope Fund" has, through the liberality of a few members and their friends, been sufficiently augmented to allow of the purchase of a first-class instrument, now expected to arrive in a few days.

Yours faithfully,

W. E. MIDDLETON.

*Schedule of Papers Read in Biological Section 1887-8.*

May 2	1887,	"The English Rabbit as an Agricultural Pest,"	William Brodie
16,	"	"The Fresh Water Hydra,"	W. E. Middleton
June 20,	"	"The Coleoptera of the N. W. T.,"	Wm. Brodie
Oct. 3,	"	"The Acclimatization of the English Goldfinch,"	Wm. Brodie
17,	"	"Canadian Ants,"	Wm. Brodie
Nov. 7,	"	"Canadian Gall Insects,"	Wm. Brodie
21,	"	"Foreign Ants,"	W. E. Middleton
Dec. 5,	"	"Hyphantria Cunea,"	Wm. Brodie
	"	"The Brownian Movement,"	W. E. Middleton
	"	"Mind in Animals,"	Wm. Brodie
	"	"The Calamorpha Moth,"	Wm. Brodie
19,	"	"Canadian Reptiles,"	Wm. Brodie
Jan. 16,	1888,	"Planorbis Corpulentus,"	J. B. Williams
	"	"Some Canadian Insects,"	Wm. Brodie
Feb. 6,	"	"Birds' Eggs,"	Wm. Brodie
	"	"Museum Collections and their Preservation,"	E. V. Rippon
	"	"Certain Alleged Digestive Glands of Carnivorous Plants,"	C. Armstrong
	"	"The English Sparrow,"	W. E. Middleton
20,	"	"Chloroform,"	Dr. Garnier
March 5,	"	"Coleoptera of the N. W. T., No. 2,"	Wm. Brodie
April 2,	"	"Habits of Canadian Birds,"	Wm. Brodie
16,	"	"The Echini,"	E. E. Thompson
		(22 papers.)	Rev. K. F. Junor

The Officers for the ensuing year are :—James H. Pearce, President ; W. E. Middleton, Secretary.

(2) *Report of the Architectural Section.*

The Architectural Section of the Canadian Institute has the honor to present its Second Annual Report :

Since our first report to the Canadian Institute we have held weekly meetings during the winter months, closing the first session of our existence on May 9th, 1887, and commencing the session of 1887-88 on October 11th.

The following papers and addresses were delivered before this section during the past year :

April 4th,	1887,	Mr. C. F. Wagner read a paper on "Carpentering."
11th,	"	Mr. J. W. Gray read a paper on "The Doric Temple in its Constructive Aspect."
May 2nd,	"	Mr. Curry gave an address on "Plumbing," illustrated by drawings, showing correct and defective work.
Jan. 17th,	1888,	Mr. M. J. Hynes gave an address on the subject of "Terra Cotta."
24th,	"	Mr. Frank Douglas read a paper on "Renaissance Architecture."
31st,	"	Mr. J. B. Vick gave an address on "Stone Cutting and Stone Setting."
Feb. 7th,	"	Mr. A. G. Gregg read a paper on "Architectural Lessons from the Human Figure."
14th,	"	Mr. Jas. Wright gave an address on "Plastering."
28th,	"	Mr. Wm. Simpson gave an address on "Joinery."
Mar. 20th,	"	Mr. R. J. Hovenden gave an address on "Painting."
27th,	"	Mr. R. J. Hovenden gave an address on "The Manufacture; Adulteration and Application of Colors."
April 10th,	"	Mr. Wm. Phillips gave an address on "House Drainage."

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The officers for the ensuing year are: Chairman, A. F. Wickson; Vice-Chairman, R. Dawson; Treasurer, C. D. Lennox; Secretary, J. F. Brown; Committee of Management, John Howard and G. F. W. Price.

ROBERT DAWSON,  
*Chairman.*

TORONTO, April 10th, 1888.

(3) *Report of the Philological Section.*

GENTLEMEN,—In accordance with the constitution of the Canadian Institute I beg to submit the following report of the work of the Philological Section for the year ending March 31st, 1888:

The number of members on the roll is eighteen. Since the 31st March, 1887, the section has held eleven meetings. Since December 13th, 1887, the meetings of the section have taken place at twenty o'clock on the second and fourth Tuesdays in each month of the session of the Institute.

At the meeting of November 14th, 1887, it was decided that the section should take up the study of "Phonetics," and the work of the members has to a great extent been the pursuance of such study.

At the meeting of January 10th, 1887, Mr. George E. Shaw, B.A., resigned the position of Secretary of the Section, to which office Mr. A. F. Chamberlain, B.A., was appointed.

During the year the following papers have been read before the Section:

- (1) April 11th, 1887, "The Science of Language in Popular Education," by the Rev. J. F. McCurdy, Ph.D.
- (2) 25th, " "Umbrian Inscriptions," by the Rev. Dr. McNish.
- (3) May 9th, " "An International Alphabet with a System of Shorthand," by M. L. Rouse.
- (4) Dec. 13th, " "The Organs of Speech, with Special Reference to the Production of Speech in the Larynx," by Dr. G. R. McDonagh.
- (5) Jan. 10th, 1888, "Throat Sounds," by the Rev. J. F. McCurdy, Ph.D.
- (6) 24th, " "Portuguese Nasal Sounds," by G. E. Shaw, B.A.
- (7) Mar. 27th, " "A Contribution to the Study of the Franco-Canadian Dialect," by Jno. Squair, B.A.

(Signed)

A. F. CHAMBERLAIN,  
*Secretary Philol. Sect. C. I.*

TORONTO, April 7th, 1888.

(4) *Report of the Geological and Mining Section.*

This Section of the Institute was organized at a meeting held on the 20th of April, 1887, and its Regulations and By-laws were approved by the Council on the 30th of the same month. The names of sixteen members of the Institute are enrolled on the minute book as members of the Section.

Besides the inaugural meeting, six meetings of the Section have been held during the year. The attention of the Section was called soon after its formation to the want of statistics and other trustworthy information relating to the mining and metallurgical operations carried on in the Dominion, and the desirableness of the public being put in possession of such information as soon after the close of each year as possible. A memorial

setting forth these views was prepared by the Section, approved by the Institute, and forwarded to the Dominion Government in May of last year. In answer to this memorial the Government replied on the 28th September, that an Order in Council was passed creating a division of the Geological Survey to attend to these matters. Furthermore, in reply to an interview had with the Deputy-Minister of the Interior by an authorized sub-committee of the Section, consisting of the chairman and secretary, the Minister stated: (1) That the officers of the division referred to have been appointed; (2) That the publication of statistics and information by this division will hereafter be much more prompt after the close of each year than hitherto; (3) That the Dominion Government has co-operated and will co-operate with the Provincial Governments in the direction of acquiring mining and metallurgical information; and (4) That the Government is considering the publication of all reports of the Geological Survey relating to mining and metallurgy in Canada since 1863 in connection with the work of the forthcoming census.

A select committee of the Section has also prepared an exhaustive report, with tables of exports and imports, on the minerals and raw metallurgical products of the United Kingdom, the United States, Canada and the other Colonies of the Empire, more especially in regard to the trade of the several countries with each other.

In addition to the foregoing work accomplished by the Section, papers were read at the several meetings as follows:

1. "On the Mineral Production of Canada in 1886-7," by Wm. Hamilton Merritt.
2. "On Iron and other Ores of Ontario," by James T. B. Ives.
3. "On certain Lacustrine Deposits and their Economic Values," by Arthur Harvey.
4. "On the Physical Aspects of Iron Smelting," by Samuel D. Mills, of St. Ignace, Michigan.
5. "Notes on Thunder Bay Silver Ores," by Robert B. Headley, of Port Arthur.
6. "Notes on New Jersey Iron Ores," by Wm. Hamilton Merritt.

Two officers elected at the organization of the Section, viz.: Alexander McNabb, Vice-Chairman; and J. T. B. Ives, Curator, having resigned in consequence of leaving the country, their places were filled by the appointment thereto of Arthur Harvey and David Boyle, respectively.

The following officers of the Section have been elected for the Institute year, beginning May 1st, 1888.

Chairman, William Hamilton Merritt; Vice-Chairman, Arthur Harvey; Secretary, A. Blue; Executive Committee, John Notman, A. Elvins, R. W. Phipps, Dr. P. H. Bryce and A. F. Chamberlain.

A. BLUE,  
*Secretary.*

Resolution adopted unanimously by the Geological and Mining Section of the Canadian Institute, at Toronto, on the 26th April, 1888:

Whereas, the late Hon. Thomas White, Minister of the Interior, for years recognized the importance of the mineral and metallurgical interests of the Dominion of Canada, and previous to taking office in the Government ably advocated through the press the desirability of more attention being paid to their development; and whereas, since taking office he has reorganized the Geological Survey so that a division of it may accomplish a practical utility in keeping a record of mining and metallurgical development in Canada, and has also made important and beneficial changes in our mining laws; Be it resolved, that, while expressing the most profound sorrow at his death, the Geological and Mining Section of the Canadian Institute desires to bear record to the great benefits accomplished by the deceased during his short term of office for the mineral interests of the Dominion of Canada; and that a copy of this resolution be forwarded to his son, Mr. Robert White.

TORONTO, April 26th, 1888.

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 ARCHÆOLOGICAL REPORT.
 

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*To the President and Council of the Canadian Institute, Toronto :*

GENTLEMEN,—Absence from Ontario during the whole of last summer prevented my doing anything archæologically during the year from a strictly provincial point of view, but I am pleased to be able to inform you that the work of collecting at least, has not for this reason been a total blank, as during my residence of nearly five months in the United States I was enabled to gather a considerable number of specimens, many of which differ considerably from the types found in this country, and some being totally unlike anything met with in Ontario.

Having spent all my time in Cincinnati, which may be regarded as the centre of that region which contains so many evidences of the ancient mound-builders' peculiar art, I was afforded several opportunities of gaining such knowledge as may prove serviceable in future should any similar works be discovered within our own territory.

I have especially in this connection to thank Drs. Craig and Collins, of Lawrenceburg, Indiana, for their extreme kindness and courtesy to me, both personally and as your representative. These gentlemen not only conducted me to interesting localities, but they secured for me the rare permission to open a number of mounds and to appropriate for the museum of the Institute anything of value that might be found therein. I regret to state, however, that owing to the unusual wetness of the season our digging intentions were frustrated on three or four occasions, until eventually the weather became too cold. Our gratitude is due also to Mr. Robt. Clarke, publisher, Cincinnati, for casts of the famous Cincinnati or Gest, and Waverly or Clarke "tablets," the originals of which are, in many respects, among the most interesting relics of pre-historic man that have been found in North America. Within recent years one or two writers have attempted to throw doubt upon the genuine character of the former tablet, but the weight of testimony warrants the full belief that the relic in question was actually taken from a mound near the north-east corner of Fifth and Mound Streets, Cincinnati, in November, 1841, and since that time it has remained the property of Mr. Gest, who owned a portion of the ground from which it was unearthed.

Mr. Robert Clarke, the custodian of this precious relic, in his pamphlet entitled "The Pre-historic Remains which were found on the Site of the City of Cincinnati, with a Vindication of the Cincinnati Tablet," has carefully collected all the evidence for and against the genuineness of the "find," and has succeeded in showing conclusively that there is no room for a particle of doubt regarding the authenticity of the tablet in question.

With regard to the Clarke Tablet we learn (quoting from the Journal of the Cincinnati Society of Natural History for January, 1887) that it "was discovered March 12, 1885, by Mr. J. P. MacLean in the collection of Dr. W. R. Hurst, of Piketon, Ohio, was obtained of him and disposed of to Mr. Clarke. . . . The history of the tablet, as given by Dr. Hurst to Mr. MacLean, is as follows:—'The tablet was taken from a mound on the farm of Abraham Cutlip, about one mile south of Waverly and about three and a half miles north of Piketon, about March, 1872. It was found about three feet from the bottom of the mound on the north side by Abraham Cutlip and David Allan, who were cutting away the mound. Dr. Hurst obtained it from them. The mound was on the second bottom of the river, had been fifteen to twenty feet high, but had from time to time been cut away, so that it was only about ten feet high at the time of the excavation. It was composed of clay. With the tablet were found darts, badges and human bones.'"

Another, called the Richardson Tablet, similar in design to those known as the Cincinnati and Clarke Tablets, was found "on the 31st day of January, 1879, in excavating a mound on the road leading from Wilmington, Ohio, to Harveysburg." An attempt has been made to give to all of these a phallic interpretation, and one writer professes to have discovered in the Cincinnati Tablet a system of time computation as applied to foetal life.

However much or little of such symbolization the tablets are capable of bearing, the archaeological student of Ontario will now have an opportunity to examine for himself in Toronto, with as much satisfaction as if he had the originals before him.

Of the other specimens I procured when away, the following may be enumerated :—

From North Carolina—Three large flints, one fragment of a steatite dish, four fragments of pottery, one pure quartz arrow-head, and thirty-five other arrowheads.

From Georgia—Fourteen arrow-points, mostly of quartz.

From West Virginia—Two smoothly wrought and peculiarly formed implements, one steatite ornament perforated with two holes, one small discoidal gambling (?) stone and four war arrowheads.

From Tennessee—One stone axe and eight flints.

From Mississippi—Seven war arrowheads.

From Alabama—Two rudely-formed axes, one spear-head and eighteen arrowheads of various kinds.

From Kentucky—Two pestles, four grooved axes, five plain axes, one hammer stone, one stone ornament, two fragments of pottery, twelve pieces of corn cobs and some burnt corn, two drills and eighty-six flints of great variety.

From Ohio—Five stone axes, two bone implements, three bone beads, two perforated unio shells, three smoothly-finished stone implements of unknown purpose, one perforated slate tablet, one small discoidal stone, one copper button-like specimen, three flint cores and twenty-four flints of different sizes and shapes.

From Indiana—Eight grooved axes, thirteen plain axes, nine discoidal stones, four fragments of pottery, one partly made axe or hammer, one perforated slate tablet or gorget, two paint-cup stones (?), five flint drills and thirty-three arrowheads. For many of these American specimens we are indebted to Miss Maria Tipton, of Paris, Kentucky; Mr. E. T. Hummel, of Decatur, Alabama; Mr. L. Deming, of Cincinnati; the Brothers of St. Mary's Institute, Dayton, Ohio; and to others whose names are mentioned in what follows.

From Arkansas mounds—Thirteen whole or nearly whole specimens of pottery vessels, which formed part of a collection made by Mr. C. W. Riggs, of Cincinnati, during the past twelve years. Also five ditto from the collection of Mr. W. K. Moorehead.

Owing to the extreme difficulty of procuring perfect, or comparatively perfect, specimens of earthenware, "modern antiquities" are frequently prepared and sold to the unsuspecting, most of whom are usually found among European tourists and travellers, and as the vessels in question were almost the only articles I procured involving any outlay, I was very careful to make inquiry relative to Mr. Riggs, his antecedents and reputation, the result in every case going to prove him thoroughly trustworthy in all respects. To private collectors and to directors of museums I can confidently recommend Mr. Riggs as not only a gentleman having the largest private collection for sale in the United States, but as one upon whom the most implicit confidence can be placed.

With two exceptions these are the only perfect specimens of earthenware in our collection, all the rest being mere shreds or fragments. Should we be able to secure good Ontario or Canadian pieces in the course of time, those will prove interesting and instructive by way of comparison, and in any event they will form an exceedingly valuable adjunct to our collection as illustrative of the work performed by a branch of the same people who were aboriginal in this country.

For more than a quarter of a century have our American scientific neighbors acted towards Ontario in a most friendly manner, visiting us frequently, carrying off to Washington and elsewhere every specimen worthy of preservation in their cabinets, and it seemed to me only fair even at this late day, to evince a spirit of good fellowship by way of reciprocity. It is therefore gratifying to state that acting upon this principle we have been able to add about five hundred objects of interest to the Provincial Archaeological Museum in connection with the Canadian Institute.

Shortly after the issue of our last report a meeting of the Provincial Land Surveyors was held in the Institute. An invitation having been extended to the members of the Association to inspect our cases, Mr. James Dickson, P.L.S., of Fenelon Falls, expressed

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his pleasure to find that a collection was being made, at the same time informing Mr. Jas. Bain and myself that he had a number of good specimens which he had been saving for years to present to just such an institution as ours, and that he would gladly forward them as soon as he returned home. Mr. Dickson was true to his promise, and it was not long until he expressed to us sixteen axes (one of them measuring fully a foot in length and the others upwards of ten inches), a mortar stone used for grinding purposes, an immense flint weapon or tool, gracefully formed and measuring ten and a half inches long, two very good stone pipes, several clay pipes and fourteen fragments of pottery, with the usual markings.

Other members of the Association expressed their intention to aid the collection as soon as opportunity offered, and when the nature of surveyors' duties is taken into account, it is evident that gentlemen of their profession might do much in furtherance of our archaeological project.

About the same time also we received through Mr. John Notman, from a gentleman whose name was not ascertained, three portions of beavers' jaws with teeth, from a grave in Onentisati, Simcoe Co., two bone awls, one trumpet-mouthed pipe-head, and one of cylindrical form, all from the same locality, also two fragments of pottery from Ste. Marie, Simcoe Co.

Early in May, we received a small but valuable collection from the Pike Farm, Wolfe Island, through Dr. Dickson, of Kingston. During many years Wolfe Island has been a favourite hunting-ground for American collectors, and some of the best specimens in their museums are from this place. In several respects there is a marked difference between the materials and forms of implements found in the eastern portion of the Province as compared with those in the west, and the fine specimens procured through Dr. Dickson, added to those we got from Tidd's Island last year, are fairly representative of that section.

The Pike Farm collection consists of native copper beads, four heavy copper pendants, two small, pointed, copper instruments, two large stone axes (one of which is eleven and three-fourth inches long), one small axe, one small gouge, a slate implement (probably used for skinning purposes), sixteen unusually large flints, sixty-one arrow-heads, two small drills, two excellent stone tubes, three fragments of pottery, four slate tablets, perforated, and one rudely finished bead (?) of black material, flat and approximately circular.

Dr. Orr, of Maple, presented us with three good specimens from the township of Vaughan, viz. : a stone, partly formed in preparation for a pipe-head, a small mortar, of size and shape convenient for being used in the lap, and a small "banner-stone."

What is perhaps the most gracefully formed, and at the same time certainly the most capacious pipe in our collection, was presented to us last spring by Mr. Moon, of Madoc. It was found by a farmer near L. Moira or Hog Lake, within a short distance of the village of Madoc, about two years previously, the find being duly chronicled in the local paper.

From the Rev. Mr. Laboureau, of Penetanguishene, we have received a finger-ring made of brass, on the "seal" of which are engraved the letters I. H. S., in monogram form. It is probably the work of some old French *attaché* to one of those Huron missions, for which that portion of the country where the reverend gentleman is stationed, was so celebrated in the early history of Canada. The ring is contained in a small and neatly made case of recent Indian workmanship.

Only a few weeks ago we came into possession of one of the largest and best private collections in the Province, consisting of upwards of fourteen hundred pieces. Those were brought together by Mr. Wm. Matheson, of Lucan, in the county of Middlesex.

Apart from the extent of this collection, and the important fact that a record has been kept of all the principal articles, it is especially interesting as being so exhaustively illustrative of a limited area, nearly everything in it having been found within the townships of East and West Williams, Biddulph, Blanchard, and McGillivray. It is noticeable that pipes and bead-forms are scarce in this collection, as compared with those found further south and east, but this want is fully compensated by the unusually large number of perforated tablets, bird-forms and other even rarer shapes, of which there are many.



Chief among the objects procured from Mr. Matheson, may be enumerated fifty slate tablets or gorgets, perforated with one or more holes and varying to a great extent in form, seven banner stones, or as they are called in a recent publication emanating from the Smithsonian Institute, "butter-fly stones," thirteen bird-formed amulets (1), two spherical hammers of granite formation (these are encircled with a deep groove for attachment to a handle), two flat hammers (both notched for handle attachment), six stone pipes, six short tubes, five shell ornaments complete, two imperfect ornaments of the same material, two copper spear or lance heads (one having a tine or prong for insertion in a handle, the other being provided with a socket to receive the handle), one native copper axe, showing unmistakeable traces of native silver, eleven grooved axes, one hundred and eighty plain axes, eleven iron tomahawks, some of them of a different pattern from anything already in our possession, six gouges, and a north-west "shaganappi" covered club. There are also several hundred flints, many of them of considerable size and well formed—others so rudely chipped as to prove admirable examples of the work done in what some writers would fain regard as the paleolithic period on this continent.

The large number of flints and axes in this collection will enable us to do, when opportunity offers, what we have hitherto been unable to perform satisfactorily, viz.: effect exchanges with individuals and institutions in our own and other countries.

From W. Ransom, Esq., England, we have received, through Mr. J. H. Pearce, President of the Biological Section of the Institute, a number of very good paleolithic flints, illustrative of early European "society." Most of these are from Hitchin and neighbourhood, in the county of Sussex, but some are from Persigny, France, and an exceedingly valuable specimen of celt in horn socket, is from one of the ancient lake dwellings in Switzerland.

Mr. Ransom's gift includes also some fragments of Samian ware and two specimens of the Roman stylus (all dug up in the city of London from a depth of ten feet below the surface) three beautiful arrow-tips, from Antrim county, and one from Derry county, in Ireland.

As Mr. Ransom's donation includes nearly all we possess illustrative of the stone age in Europe, we are indebted to him for the opportunity he has afforded us to compare equivalents of the two continents.

A genuine old English "Grey-beard" pitcher from the same gentleman is, perhaps, the only one in any Canadian collection, and will not be devoid of interest to those who fondly regard all that relates to the mother-land.

Owing to an oversight, our last report contained no reference to the gift of Sheriff McKellar, of Hamilton. This consisted of a *brach*, or old-fashioned handmill made by Mr. McKellar's father and used by the first settlers in the Talbot settlement. This *brach* was mounted in a portion of a hollow log, as originally used, and was sent to the Intercolonial Exhibition, London, after its return from which it was deposited with the Institute.

Another pair of *brach* stones was presented to the museum by the sheriff's brother, Mr. Peter McKellar, of Chatham. These two sets are probably the only ones of the kind ever made in Ontario, and it is gratifying to know that they have been preserved "to point a moral and adorn a tale" for coming generations.

Brachs or querns occupy a prominent place in the Archaeological Museums of Britain and other European countries. It is not long since they were used in the Orkney and Shetland Islands, and it is said they were employed still more recently in Cape Breton.

Taken altogether, the year has not been barren of results, at least in so far as increase to the museum is concerned. Upwards of two thousand specimens have been added to our cases, and the collection is beginning to assume a character such as to warrant the belief that in a few years the Province of Ontario will possess an Archaeological Museum, which, if not what it might have been with an earlier start, will, at all events, go a long way towards placing us upon an equal footing in this respect with other progressive nationalities.

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It is needless to repeat here that, but for the small grant made by the Provincial Legislature to assist in this work, we could have done absolutely nothing. The material already in our cabinets is worth many times more than it has cost, and at the present rate of increase in quantity will, in two or three years, require every inch of space in the museum.

Just in proportion as it grows in number, variety and instructiveness, will it become popular, and consequent upon its popularity, we may look for a corresponding increase in the number of donations.

Two of the chief drawbacks to its growth and popularity in the meantime are its situation on a third-story floor, and the impossibility of having it thrown open to the public at reasonable hours. There are probably thousands of people in this city who are totally unaware that there is even a small collection of such objects; but few throughout the province know of its existence, and tourist visitors never hear it mentioned.

I am not aware that any real progress has been made since last report was presented to you towards the satisfactory solution of the problem relating to the purpose or uses of the many different sorts of objects that for convenience sake have hitherto been known as "banner-stones" and "ceremonial" weapons. There are not a few writers on this subject who express themselves glibly as to the application of almost every specimen that comes under their observation, but the truth is that regarding a large number of types we are totally ignorant of the purposes they served in aboriginal economy. Still we have reason to hope that some light will yet be thrown upon at least a few of the obscurities. In the journal of American Folk-Lore for October-December, 1888, there is a brief article by Mr. Franz Boas, on a "Collection of Ethnological Specimens from Alaska," made "by Lieutenant Emmons, during a five years' stay" in that country. These have been purchased by the American Museum of Natural History, in New York, and we are informed that "the collector has taken great pains to ascertain the meaning of the various implements," as well as to "record the traditions referring to them."

Our knowledge of what have been called ceremonial weapons, gorgets or tablets, and various animal forms has always been seriously at fault, but even the scanty extracts given in the article referred to, from the notes of Lieutenant Emmons, seem to be indicative of something like certainty. For example, the holes so almost invariably found in such objects have always proved mysterious to students, but writing of an ornamented and perforated stone Lieutenant Emmons says: "The holes in this amulet are used to put into them what is picked from the teeth, so that witches will not get hold of it to bring destruction to the person." Although this hint may not serve to explain everything relating to the presence of holes in such objects, it will at any rate give us a clue, and it agrees fully with a vague impression I have long entertained that they were in some way connected with luck.

It is unnecessary to go very far back in our history to meet with similar superstitious beliefs. It is not long since diseased persons, especially children, were passed through the dolmens of Cornwall and Brittany, with the hope that a cure might be effected, and this belief was, no doubt, connected with one concerning witch craft or the evil-eye. Keys, rings and beads have always been regarded as particularly ominous. Among many amulets of a similar kind in the National Museum of the Society of Antiquaries of Scotland, is one (No. 182, Section I) which is "a flat oblong stone, four inches long, by two and three-quarters wide, and less than a quarter of an inch in thickness, notched on the sides, and pierced with two holes one and a half inches apart, formerly used as a charm for the cure of diseases in Islay, Argyleshire," and No. 196 in the same section is a "perforated stone which was hung up in a cow-byre in Cumberland, to protect the cattle from being bewitched." It would be easy to multiply instances relating to the past, and not very difficult to adduce many connected with the living generation.

It appears not impossible that the American specimens hitherto (for the want of better names), known as banner-stones, gorgets, and ceremonial weapons, were nothing more than amulets, supposed to have power against this or that kind of evil spirit, in accordance with the form or device of the objects themselves. Perhaps, also, this class of speci-

men may be found to include those tubes which have always been a puzzle, and of which our collection contains several fine examples. In the "Personal Narratives" of Humboldt, we find that writer in speaking of articles made from jadestone, remarking that the Spanish planters share the predilection of the Indians for these amulets, which are sold at a very considerable price, the form most frequently given to them being that of the Persepolitan cylinders, longitudinally perforated, and loaded with inscriptions and figures.

When we bear in mind that the Tlinglit of Alaska are less removed from a condition of genuine savagery than are most of the other North American aborigines, it is not unreasonable to expect enlightenment on many points from the notes of an observer like Lieutenant Emmons, who, as Mr. Boas states, "has taken great pains to ascertain the meanings of the various implements."

Since the issue of our first report last year, letters from different parts of the Province have been received by the Education Department, the Institute, and myself approving of the task we have undertaken, and giving information relative to localities and discoveries connected with the pre-historical or early historical existence of the Indians. Want of opportunity has prevented any advantage from being taken of these, but in all probability some original work will be performed next year at a few of the places to which attention has been directed, as well as elsewhere.

I am still convinced that from the five thousand teachers of rural schools in this Province, there is much valuable information to be gleaned. The question is how to reach them. Shall it be by a circular, or by a card in the educational journals? Perhaps both methods should be tried. We need not expect too much at first, but if the subject is kept persistently before the eyes of all who are engaged in rural school work throughout Ontario, there can be little doubt as to the profitable results. Perhaps even one letter from such a correspondent would fully repay all the trouble and expense incident to the plan.

Our collection has now assumed such proportions that it will be necessary to rearrange it, and in some measure to alter the classification. I intend also to paint a number on each specimen, and to catalogue them all. In many museums a number is all that serves to identify the pieces, and constant reference to a catalogue is thus involved on the part of him who wants to get information. This, however, is not my idea of how either to popularize a collection, or to facilitate the work of the student.

Everything possible should be done to enable young and old, learned and unlearned, to examine with pleasure and profit, at the least possible expense of time and trouble. This object can be obtained only by means of copious and legibly written, or printed labels.

It is gratifying to be able to state that as the existence of our collection becomes known so many persons having specimens willingly contribute them to the Museum.

Before this report passes through the press it is hoped that all the specimens will have been rearranged. The area of case room has been fully doubled, and we may now regard our Archaeological Cabinets as not unworthy of examination by specialists in this department.

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DAVID BOYLE.

TORONTO, December, 1888.

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 NOTES.
 

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We are too much disposed to overlook the fact that there are degrees of advancement in savage life, both with regard to comparative time and to peoples, even neighboring ones, that exist contemporaneously.

It is seldom that in the writings of those who profess to describe the "manners and customs" of the uncivilized we are permitted to get a glimpse of the true, inner social aspect of life. Much is related regarding the predaceous, warlike and religious practices of this or that savage nation—something perhaps about its marriage and burial usages, its costumes, its domiciles and its most striking or peculiar characteristics of any other kind, but as a rule the greater part of such descriptions is superficial, and too often "things are not what they seem." Unseen, because far deeper, lie the originating instincts, the motives and the habits of thought that find only partial expression in what catches the eye or ear of the alien and casual onlooker.

By means of what we now call "folk-lore" something is being done in various parts of the world to put us in touch with the inner life of the simple past and its lingering representative in our own time. The scope of our knowledge has thus been extended in a direction once thought to be too narrow and barren for research, and the results have aided in the solution of not a few ethnological problems. On this continent efforts have been successfully made to collect myths and legends of the Indian race, and the work is still going on, although of course, owing to lapse of time, much has been irrecoverably lost.

The more we learn about the aborigines of this portion of America the more are we brought face to face with the fact that their savagery fell but little short of civilization. Perhaps barbarism would be the best term to employ when speaking about the condition of such people as the Iroquois, and in many respects the Hurons were little, if at all, inferior.

That they were revengeful and blood-thirsty is undeniable, but among the nations they were not alone in this respect. Their manifestation of these qualities was simply less refined than that of others who probably regarded themselves as civilized beings. In social and political virtue they were unsurpassed, and in point of mechanical ability their capabilities and attainments were marvellous. It is extremely doubtful whether any other people in the world, similarly circumstanced, could be compared with them in the latter respect. The variety, tastefulness and workmanship of their relics are amazing.

"Patience and perseverance" are stamped upon most of their productions, for it appears probable that many specimens of their handicraft must have occupied them at intervals during years, or even a lifetime. To take a rough lump of granite or other equally hard material, and fashion it by persistent pecking and rubbing into a symmetrical plain or grooved axe, or to form a bit of huronite into animal semblance for some mysterious use, required a continuity of purpose and a skill in execution no less remarkable than if one of ourselves should undertake to produce a bust with the aid of no tool but a pocket-knife, or a piece of machinery with only a hammer, a saw and a file.

In the art of making coarse pottery they excelled, and the further south we go until we reach Peru, the more do design and workmanship improve. Nothing that was very elaborate seems to have been attempted in this line by the aborigines who inhabited our part of the continent. Here they seem to have contented themselves with plain, serviceable vessels, yet not wholly devoid of ornamentation. This consisted mainly of lines and dots impressed upon the clay when soft, with an occasional variation in the outline of the vessel, such as narrowing to form the neck, flaring of the lip, and the addition of projections of various kind round the mouth. Although immense numbers of earthenware fragments are found scattered all over this Province, entire vessels are very seldom discovered. Farther south this does not hold good to the same extent, but whether this is owing to a difference in the quality of the materials employed in the manufacture, or to the climate and the character of the soil it is not easy to say.

Whilst no doubt among the Indians, much more than with ourselves, there were individuals who preferred articles of their own manufacture, it seems abundantly evident

that trades were specialized by them to a considerable extent. The expert in pipes, arrows, etc., would confine himself mainly to such occupations. As corroborative of the remark made in our last report that "to the women, in all likelihood, was allotted the making of earthen vessels," I was informed by Dr. Collins, of Lawrenceburg, Indiana, that there died recently an old woman belonging to a western tribe of Indians, who was said to be the last living representative of her people possessing the art of making pottery of the genuine, old-fashioned description. A friend of Dr. Collins, who was well acquainted with the old woman, persuaded her to make for him six specimens of her art. These he distributed among his friends, one falling to the share of Dr. Collins. I had the pleasure of examining this piece, and but for its comparatively new appearance it seemed to correspond very closely in material, form and ornamentation, with those that are occasionally taken from ossuaries in Canada and the United States.

The ancient people of the lower Mississippi valley were adepts in the production of pottery. The Louisiana historian, Du Pratz, refers to this fact, remarking that he found the Natchez Indians so expert that he got them to make a set of vessels for his own use. "The women," he says, "make pots of an extraordinary size, jars with a medium-sized opening, bowls, two-pint bottles with long necks, pots or jugs for containing hair oil, which hold as much as forty pints, and finally plates and dishes in the French fashion."

Father Marquette, in the account he gives of his voyage down the Mississippi in 1673, says: "They [the Indians of Arkansas] used in cooking, large pots of earth very curiously made, and large plates of the same material, which they employed for a variety of purposes."

Mr. George P. Thurston, in the *American Magazine of History* for May, writes: "Utensils and objects of well-burned clay are found in Tennessee, Missouri, Arkansas and elsewhere, of varied, original and even artistic form, interesting mementoes of ancient life, but they indicate no knowledge of the potter's wheel. They are without glaze, and are but comparatively rude conceptions, fashioned by hand."

The absence of glaze here referred to was, in some measure, overcome by the Natchez, whose "red-stained pottery" is spoken of by Du Pratz, a specimen of which we now have in our collection. A black stain was also used, and vessels are occasionally found whose exteriors are ornamented with patterns consisting of both colors. There is little doubt that this staining vastly improved the serviceable qualities of the pots, besides adding greatly to their appearance, for the material so applied has filled up the pores so thoroughly that the vessels thus treated take a fair polish when rubbed, and are at all times comparatively smooth to the touch.

The following nine figures, now in our collection, represent average specimens of earthenware from mounds in Cross County, Arkansas. They formed part of Mr. C. W. Riggs' exhibit at the Cincinnati Exposition:

#### POTTERY.

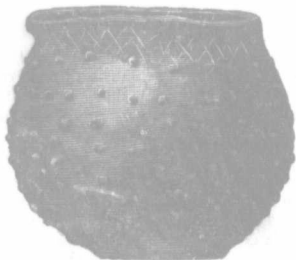


FIG. 1.

Fig. 1 is of the greatest capacity in the lot, its widest diameter being about eight inches. Considering the size its sides are thin. Although the outline is not devoid

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of gracefulness, the workmanship is rude. The flaring of the lip is not uniform, nor are the walls of equal thickness throughout. Perhaps, the chief peculiarity of this specimen is the ornamentation which consists mainly of small, rounded projections about one fourth of an inch in diameter, and fully an eighth of an inch above the general surface. If these have been made, as is probable, by the material when soft being pushed outwards with the point of a blunt instrument, all traces of this operation have been removed, for the inside is as smooth as if nothing of the kind had been done. Mr. Riggs, had only another specimen ornamented this way in his collection, and he informed me that the pattern was rarely found.



FIG. 2.

Much less in size, but more beautiful in every respect is Fig. 2. Four scrolls cover nearly the whole of the lower portion, and between these are small circles each containing a diagonal cross. The upper part, or neck is relieved with a series of bars extending from the lip to the body of the vessel, and these appear to have been luted to their places after the general form had been completed.



FIG. 3.

The scroll design on Fig. 3 is similar to that on Fig. 2, but is more deeply marked, and round the neck are several loops of triangular form attached solidly to the vessel at their lower, or pointed ends, as well as to the lip itself. A clear space between these and the neck left ample room for suspension by means of a cord, but perhaps the intention was simply an ornamental one.



FIG. 4.

Fig. 4, nearly eight inches in diameter is fairly imitative of a frog, although the cut does not bring this out very clearly. In fact the legs and even the toes are plainly

modelled, and the protuberant eyes are well marked. Otherwise the specimen is perfectly smooth on the surface.



FIG. 5.

There has been a more pretentious attempt in the direction of art in Fig. 5. The handle, at the left of the cut, has certainly been a head of some sort, but whether a human one, or that of some other animal, it is now impossible to say, as the front portion has been destroyed. The projection on the opposite side has also been broken, and we can only imagine what it may have been. The body of the vessel is very well formed, and the burning has been better done than is often the case.

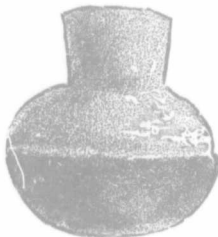


FIG. 6.

Fig. 6 is almost classic in outline, and is peculiar in having a slightly raised cincture or band round the middle of the body. The neck is not now full length, some pieces having been broken off, but it was probably never more than half an inch longer.



FIG. 7.

So far as shape is concerned Fig. 7 is a gem of aboriginal ceramic art. Its outline is almost perfect, and no attempt whatever has been made to ornament it. With the ex-

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ception of a small fragment from the lip, this specimen is in every respect as good as on the day it was finished.



FIG. 8.

Fig. 8 is equally beautiful in form, and is remarkable both for the great length of the neck, and on account of having a well-made collar round its base to give it solidity when standing. Even here, however, there is no sign of the potter's wheel having been known—a close examination merely showing that the work has been done wholly by hand, but with infinite pains to make it as true as possible. The surface is free from markings.



FIG. 9.

Fig. 9 is a specimen of the "red-stained pottery" mentioned by Du Pratz. Some pieces have been broken from the lip, and a chip has been knocked off the side. These fractures enable us to see that the red-stain did not penetrate beyond the surface. Here also, as in Fig. 8, there is a well-formed base giving the vessel quite a modern appearance so far as shape alone is concerned.





FIG 10.

The fragment here figured was presented to us with other things by the Society of Natural History of Cincinnati, and was found near Madisonville, Ohio, a neighborhood which has furnished many thousands of the finest relics that enrich the museums of the world.

The simplicity and beauty of the design (Fig. 10) are unique. The pattern is totally unlike the normal lining traced by the Indian on clay vessels, and indicates a taste considerably in advance of what is usually exemplified in ornamenting pottery, or, indeed, anything else.

## CLAY PIPES.



FIG 11.

Fig. 11 differs considerably from most aboriginal attempts to imitate the human face. It has been moulded in strong relief—the superciliary ridges are very prominent,

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and the eyes, nostrils and mouth are deeply depressed. As is often the case, the face has been made to look towards the smoker when the pipe was in use. Unfortunately the stem of this pipe has been broken and lost.



FIG. 12. (Nearly full Size).

We seldom associate a sense of humor with Indian character, but Fig. 12 would appear to indicate that the maker of the pipe represented had some of this quality in his composition. The eyes and mouth are set awry and at different angles, giving an exceedingly comical air to the face—much more so, in fact, than is brought out in the engraving. This was presented to us by Master Theophilus O'Connor, of Glen Huron.

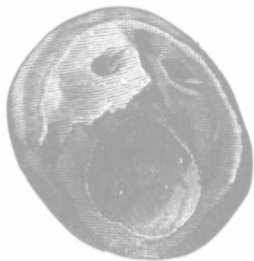


FIG. 13. (4-5 size).

If another illustration of aboriginal humor is wanted we have it in Fig. 13. This represents the top or upper edge of a clay pipe, the open mouth of the human face forming the bowl. This is a unique specimen so far as the design is concerned—at least

I have not heard of anything similar elsewhere. It was found in Nottawasaga by Master Herbert O'Connor. The figure is only about four-fifths of the full size.



FIG. 14. (Full Size.)

A very fair imitation has here been made of the head of a bird of prey. This clay pipe (Fig. 14), is from the township of Nottawasaga, and was presented to us by Mr. Albert Lougheed. Unfortunately, the break prevents any certainty as to how the stem pointed, but very likely it was in the same direction as the beak. The lip of the bowl is of more than the usual thickness in Huron pipes.



FIG. 15.

The very slender-looking pipe figured here is one of the few almost perfect clay specimens in the museum. Fig. 15, is only about one-fourth of the full diameter, having been too much reduced by the engraver; still, the proportions are correct. In the making of such curved stems, it is probable that a flexible twig or other vegetable stalk was introduced through the entire length when the clay was straight, or else the material has been moulded round a bent core, and in either case the burning has been effected with the core in position, so that when this operation was completed the hole was left perfectly clear. This fine specimen is from the Baby farm at Lambton, where it was found by Mr. James Kirkwood.

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## STONE PIPES.

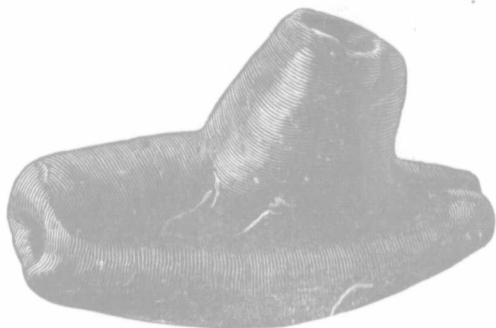


FIG 16. (full size).

Fig. 16 was presented to us by Mr. W. G. Kidd, Public School Inspector, city of Kingston. It is made of steatite or soapstone, a material plentifully found both *in situ*, and as "drift," and one which is easily wrought. This pipe is by no means symmetrical,

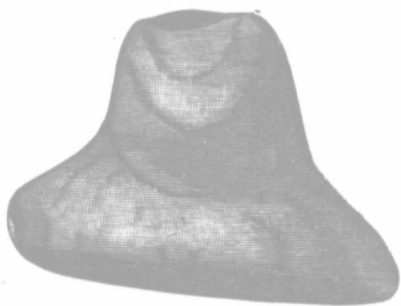


FIG. 17.

for not only does the bowl slope backwards from the stem end, but it inclines considerably to one side when the base rests on a level surface. The workmanship is very rude and

the type is regarded as one of the oldest. Compared with Figs. 17 and 18, as given in the report for 1887, it would seem almost to complete the series from the rudest to the

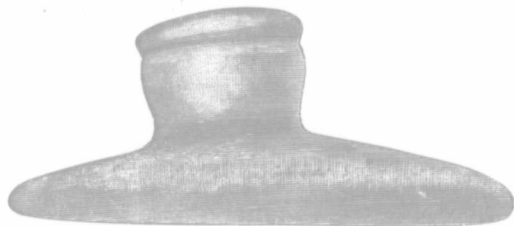


FIG. 18.

most elegant form in this class. It was found under a pine stump in the township of Pittsburg, county of Frontenac, not far from the St. Lawrence.

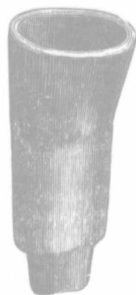


FIG. 19. ( $\frac{1}{3}$  Size.)

Fig. 19 is a very good specimen of plain pipe-head. As it is quite black and smoothly finished, the nature of the stone cannot well be ascertained without injury to the appearance. It is perfect in every particular. The short stem-piece being intended for the insertion of a wooden tube. The appearance of the pipe thus complete would be very much like that of a cigar-holder. It was found by Mr. Wm. Bradley, of McGillivray township, on the Grand Bend of the Sable River, and formed part of the collection purchased from Mr. Matheson, Lucan.



FIG. 20.

In pattern and finish, Fig. 20 is as far removed as possible from the Pittsburg specimen. This gracefully formed pipe is almost as perfectly round and smooth in the

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bowl as if it had been produced in a machine. The stem is a flattened oval—the upper and lower being the compressed sides. The wall of the bowl is no thicker than that of an ordinary clay pipe, and, with the exception of a small chip out of the lip, the specimen is absolutely perfect. Its total length is seven inches. The greater portion of its surface is covered with delicate markings in which many people profess to see a pictograph representing wigwams, fortifications and tallies. This pipe is also made of steatite. It was found on the bank of Lake Moira, or Hog Lake, a few miles from Madoc, and was presented to the museum by Mr. Moon, of that village.

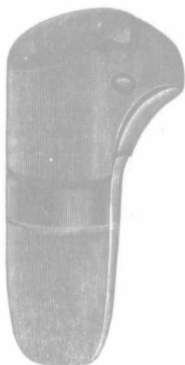


FIG. 21. (4-5 Size).

This pipe (Fig. 21) is also a well finished specimen. It seems to have been modelled from the head of a hawk or eagle. The material is quite black. There is a hole at the back for the insertion of a stem. This specimen was found by Mr Frank Scott, London township, and formed part of Mr. Matheson's collection.



FIG. 22.

Fig 22, from the same collection, was found on the farm of Mr. Thomas Stanley, township of McGillivray. It is of a light, fine grained stone, and has had much labor

expended upon it. The lozenge pattern on the upper portion of the bowl is accurately worked; the rings forming the neck are almost perfectly true, and the circular form is so correct that one is apt to conclude that the pipe must have been made with the aid of a lathe. As seen in the engraving, two chips have been knocked off this otherwise perfect specimen—one from the upper and one from the lower part.



FIG. 23. ( $\frac{3}{8}$  Size).

Fig. 23 is another from the Matheson collection. The material is limestone, which has been rendered perfectly black exteriorly. The head and shoulders forming the bowl are circular, but the stem-holder is square. There is no attempt at detail in ornamentation beyond the rudely formed features of the face. This very good specimen was found at Hope Bay (near Wiarton), in the county of Grey, by Mr. John Hewton.

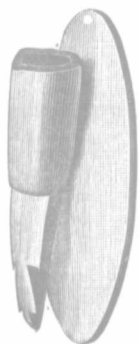


FIG. 24.

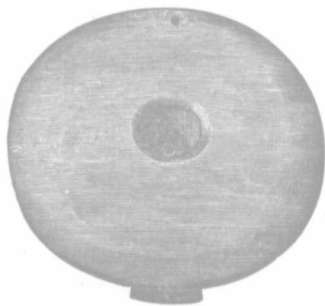


FIG. 25 (Size,  $3\frac{1}{2}$  inches).

The very singular pipe figured here (Figs. 22 and 25) dispels former doubt relating to Fig. 26 which appeared in last report.

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It is quite certain that this is a pipe. It is constructed on the same plan as Fig. 26, but with much better effect. It is made of a fine-grained sandstone. The disc is three inches and a half in diameter, comparatively thin, and the bowl is detached from the disc



FIG. 26.

except in the centre, where it communicates with the large stem-hole from the opposite side, as seen in Fig. 25. The lower half of the bowl-piece is wholly ornamental, and it is noticeable how nearly the design corresponds with the lower end of Fig. 26; the one however, belonging to the bowl and the other to the disc. At the edge of Fig. 25, just above the mouth of the bowl, is a small hole, as if for suspension, and this probably was the way it was carried, serving, no doubt as a bit of personal decoration when not otherwise in use. This beautiful and unique object was found by Mr. James Cluness, on his farm in the township of West Williams.



Fig. 27.

The tastefulness of design and treatment of subject in Fig. 27, are suggestive of an aboriginal Michael Angelo. The material of which this pipe is composed, is a hard, compac



limestone. The bowl proper is, in its cross section, square, and the sides are straight, the width at the mouth not greatly exceeding that of the base. The head, which is so exquisitely carved on the front side, shows nothing characteristic of Indian physiognomy. Every feature is well brought out, and the finish of the workmanship is of a very high quality. This pipe is perfect in every respect. There is a stem-hole at the back. Fig. 27 is from the celebrated Lougheed farm, in Nottawasaga, and was presented to the museum by the finder, Mr. Albert Lougheed.

#### IMPLEMENTS OF STONE.

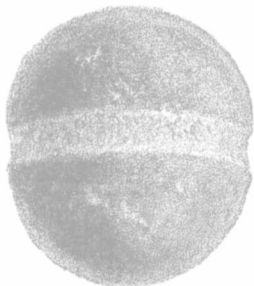


Fig. 28. ( $\frac{1}{2}$  Size).

Dependent, as the former people were, mainly on stone for their tools and implements, they were quick to perceive in water-worn pebbles such shapes as might be readily adapted or modified for specific purposes. The museum of the Institute contains many specimens of this description. Naturally, most stones of the kind in question are oval or spherical, and as these required comparatively little labor to form hammers or club-heads, every first-rate specimen found was, no doubt, appropriated for such purposes. These stones in their natural condition are often found in graves where they have been deposited with finished articles, as if to furnish material for use in the spirit land. Sometimes without the expenditure of a single blow on them, they were encased in raw-hide and attached to the end of a handle, but frequently a groove was cut round the middle for the reception of a stout leather thong, the ends of which were firmly wound about a shaft. Fig. 28, procured from Mr. J. Wood, Lawrenceburg, Indiana, is a good example of the latter method, intentionally. Most of the surface possesses the appearance so characteristic of water-wear and subsequent weathering, but the aboriginal finder had begun to peck a groove all round, as is perfectly evident from the lighter color and sharper outline of the markings, as well as from the slight depression itself.

Stones of the kind referred to are frequently picked up in fields a long distance from water-courses, and are highly prized as Indian relics by youthful collectors, who cannot account for the symmetrical forms and smooth surfaces otherwise than by attributing these to human skill; but unless such specimens are found along with what are unmistakable objects of Indian art, they are totally valueless, except as geological curiosities.

Of a simple adaptation in this line Fig. 40 is a good example. It is a flat water-worn stone, originally ovate marginally. Near to the smaller end notches have been chipped for the purpose of fastening a handle, and it is evident that the intention was to make

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use of it as a temporary working hammer, or as a club-head for less innocent purposes. Two of these form part of our collection.

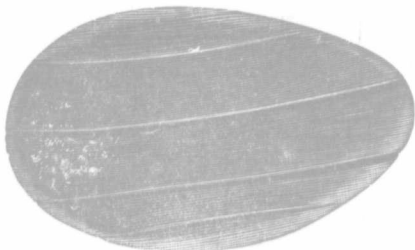


FIG. 29. (full Size)

Fig. 29 is composed of a fine, close-grained argillite, cut deeply on both sides, as if for the purpose of being broken off to form beads. Other specimens in our cases illustrate the same treatment, but this is interesting as shewing the advantage taken of a water-worn stone for the purpose of economizing labor. The other specimens referred to have been rough blocks, which were first smoothed on the larger parallel sides before the cutting was begun. (See Fig. 37). Fig. 29 was found by Mr. Richard Prance, on the eighth concession of McGillivray township. From the Matheson collection.



FIG. 30. (Full Size.)

This specimen (Fig. 30) is somewhat peculiar. It is made of blue slate, and has been sharpened to a chisel edge at the wide end. The small end is carefully rounded, and the whole of the object is well finished. As a cutting tool it would be useless, and the

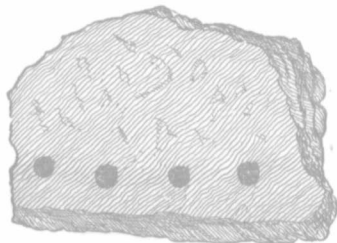


FIG. 31.

presence of the hole rendered it too weak for any operation requiring much pressure. Perhaps it was worn as an ornament, or as a button or pin to fasten clothing, and might

also have been used to mark patterns upon earthenware, fragments of which in the museum have certainly had the aid of some such instrument in their ornamentation.

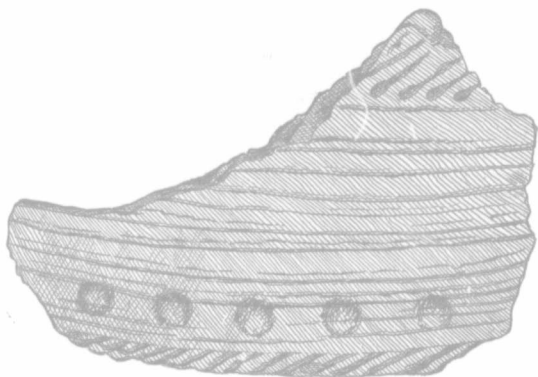


FIG. 32.

Fig. 31 shows where a tool having a pointed end like Fig. 30 has been pushed into the clay from the inside of a wide-mouthed pot, and Fig. 32 exhibits the effect of this operation on the outside. Both pieces are fragments of the same vessel.

FIG. 33. ( $\frac{2}{3}$  Size).

Five other specimens that I regard as having been similarly used, were recently presented to the museum by Mr. A. F. Chamberlain, M.A., he having procured them from a Mr. Stevens on Noncon Island, Lake Scugog. The one figured (Fig. 33), was found in a grave along with a copper axe, stone axe, slate tablet, bone spear, and other articles including a piece of pure plumbago.

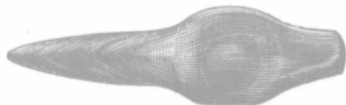
FIG. 34. ( $\frac{1}{2}$  Size).

Fig. 34 is very unusual in form, and the only use that suggests itself to me is that of a pottery-marker. One of the noticeable features of Fig. 34 is that it has not been

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bored. It is from near the city of Hamilton, in Butler county, Ohio, and was procured from Mr. W. K. Moorehead, now of Washington. The material is veined blue slate.

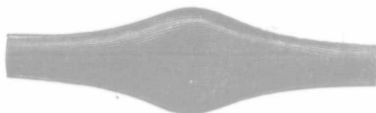


FIG. 35. ( $\frac{1}{4}$  Size).

Fig. 35 is from Shelby County, Ohio, and was presented by Mr. Moritz Fischer, Curator of the Kentucky State Museum, in Frankfort. It is of argillite, like Fig. 34, is flat on one side and rounded on the other. On the lower, or flat side, a beginning has been made in the boring of two holes, each about three-fourths of an inch from the middle, and in the direction of the ends.

Another specimen, somewhat similar in shape in our collection, is from Mason county, West Virginia.



FIG. 36. ( $\frac{1}{2}$  Size)

Fig. 36 belongs to the class of stone relics commonly known as "sinkers," but was more probably a personal ornament—a pendant of some sort, the notch or neck answering one of the purposes usually served by a hole. In this respect it corresponds with the hematite specimen, Fig. 78. This stone was found in W. Middlesex.

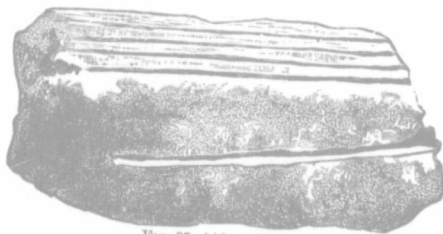


FIG. 37. (About  $\frac{1}{2}$  Size.)

This is an instructive specimen, showing some of the steps taken preparatory to making red sandstone or freestone beads. The rough block has been smoothed on two

sides, and long cuts have been made for the purpose of procuring pieces suitable for boring. We have several finished beads of this material in our cases, from the counties of Simcoe, Wentworth and Middlesex. Fig. 37 is from the Lougheed farm, Nottawasaga.

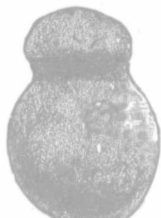


FIG. 38.

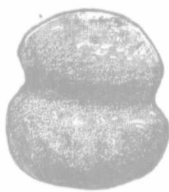


FIG. 39.

Stone hammers, like those figured (Fig. 38 and 39), are not often found. Fig. 38 is of limestone and Fig. 39 is of granite rock. It will be observed that the groove in Fig. 38 is between one-third and one-fourth of the whole length from the top, while that of Fig. 39 is in the middle, although, owing to preponderance of bulk, the lower end of the latter is also the heavier. It does not seem at all likely that these tools were employed to strike anything harder than wood, and perhaps the chief use to which they were applied was the driving of stakes in connection with the building of wigwams or "log-houses," or in fastening poles in the ground for fortification purposes. Fig. 38 was found 42 miles north-west of Brandon, Manitoba, by Mr. Titus Andrews, and Fig. 39 at Point Edward, Ont., by Mr. Louis Earnest. Both were procured from Mr. Matheson.

The former specimen is six and a quarter inches long and four and a quarter wide, while the latter is five inches long and four and a half inches wide.

A hammer of this kind found in Ohio weighs sixty pounds.



FIG. 40.

Fig. 40 is quite different in construction. It is simply a flat water-worn stone, measuring not more than an inch and a quarter at the thickest portion, and of soft shaly limestone.

Advantage has been taken of the natural ovate form to cut notches near the small end for the attachment of a handle, but it could have been intended only for temporary use. It is a little over eight inches long and nearly five inches in width. A smaller

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one of the same kind is in the museum. Fig. 40 was found on lot 15. con 2, Biddulph and was procured from Mr. Matheson.

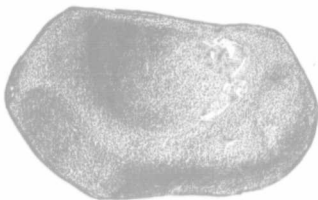


FIG. 41. ( $\frac{1}{2}$  Size.)

Fig. 41 is a hollow limestone pebble. Stones in this condition are usually spoken of as "paint-pots," or "paint-mills," the supposition being that the work of hollowing has been performed artificially, and that the Indians employed them for grinding or holding the paints they used for personal decoration. While it is not improbable that some of these stones were employed for such a purpose (especially when they are found associated with other articles in graves), it is more likely that their peculiar form is the result of the action of water. The hollow has formed the matrix of a fossil which, having dropped out, subsequent attrition of sand and gravel in a water-course speedily deepened, rounded off and left smooth.

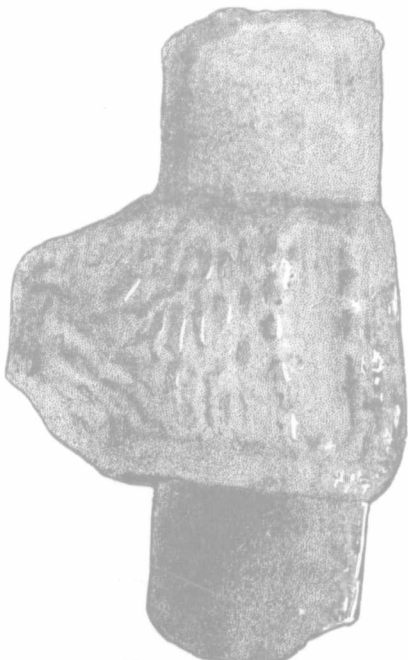


FIG. 42. (Full Size.)

Fig. 42 is part of the small European collection presented to us by Mr. W. Ransom; 3 (C.I.)

Hitchin, Sussex, England. The upper three-fourths consist of deer horn, into which a deep hole has been worked from the under side, forming a socket in which there is fixed a small stone celt, identical in form with many that are found in this country. The handle, to the left, has almost wholly decayed, leaving only what is shown in the cut, unless indeed we regard the implement as a chisel, in which case the upper end would have been the part held in the hand. This specimen is from a lake-dwelling in Switzerland, and is introduced merely for comparison with our own.

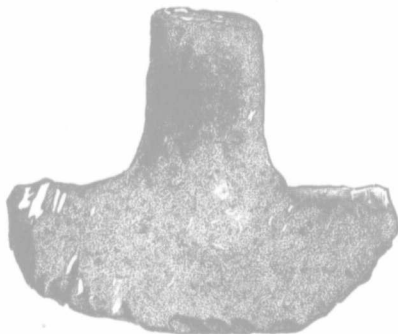


FIG. 43.

Fig. 43 has evidently been employed as a cutting tool, the neck having been fixed in a socket or otherwise fastened to a handle. The type is of very rare occurrence in America. Many European collections contain highly finished symmetrical specimens. This one is from the County of Middlesex (where it was found by Mr. Delaney), and was procured from Mr. Matheson.



FIG. 44.

Grooved axes are rare in Ontario as compared with Ohio, Indiana, Kentucky and some neighboring States. In most cases also with us, the channel has been cut all the

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way round in implements of this kind. To the south of us, however, in the larger number of these axes one of the narrow sides (probably the rear one when in use), has been left ungrooved, and occasionally specimens are found having the ungrooved edge slightly furrowed longitudinally, suggesting the idea of a wedge having been employed to tighten the tool when it became loose in its withle handle. The excellent axe shown at Fig. 44, is one of two procured through the kindly offices of Dr. Craig, Lawrenceburg, Indiana, from Mr. Rajon, J.P., of the same city.

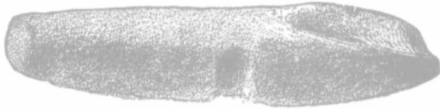


FIG. 45.

Gouges are seldom grooved. Fig. 45 is an exception. The inference is that this specimen was intended to be fastened to a handle. No signs of abrasion, however, are to be seen about the groove, but this may be owing either to the effect of "weathering" or to the tool not having been much used after it was made. The latter is the more likely supposition, as the "bit" is quite sharp and smooth. Fig. 45 is fully eight inches long. It was found on lot 18, con. 7, McGillivray township, by Mr. John Taylor.—Matheson Collection.

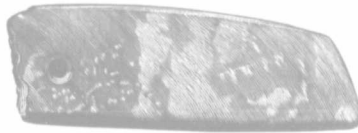


FIG. 46. (½ Size.)

There can scarcely be any doubt that Fig. 46 was intended to be used in the dressing of skins. The material is slate, and the lower edge has been sharpened by rubbing or grinding wholly from one side—like a carpenter's chisel. The hole was for convenience in carrying. Fig. 46 is nearly a perfect specimen in every respect, and is especially interesting as having been found within the city limits. It was taken from a cutting on Withrow Avenue by Prof. W. H. Vander Smissen and myself in the summer of 1887.



FIG. 47.

A considerable number of those mysterious stone tubes have been added to our collection during the year. Two of the best are from Pike's farm, Wolfe Island. They are made of a fine-grained, buff-colored stone, very much like the lithographic stone of commerce. The diameters of the two are nearly the same, but one is only half as long as the other. The longer one, measuring eight and a half inches, is shown at Fig. 47. Both of these differ from the common form of tube in the hole being more than twice as wide at one end as at the other. In Fig. 47, at the end showing the hole, the wall of the tube is scarcely one-eighth of an inch in thickness, while at the opposite extremity it is twice that. In addition to this the sides, although beautifully rounded, are not parallel throughout their full length, as the diameter increases slightly (but only slightly) at the end where the hole is enlarged.



It is probable that, like the "gorgets" and "ceremonial" stones, the tubes were regarded as being both ornamental and lucky. Were they ever employed as pipes? Even if it could be shown that they had some specific use, the element of superstition would still have to be taken into account, as we have the authority of Schoolcraft and others for believing that all, or almost all, the decorative "environments" of the Indian were looked upon as being more or less in the nature of amulets.



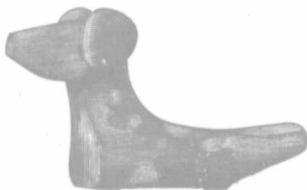
FIG. 48.

We may consider Fig. 48 from the same point of view. It is fashioned from a piece of thick and richly-veined slate—spherical except on one side, which has been made slightly concave in line with the hole which penetrates the piece. It was found on lot 20, con. 18, West Williams, by Mr. Alex. Thompson.



FIG. 49.

Fig. 49 is an unfinished specimen of the same kind, but of different material. A beginning has been made in the drilling of a hole in what is clearly a water-worn stone. It is from Brookfield, Missouri, and was procured from Dr. Rear, Toronto.

Fig. 50. ( $\frac{1}{2}$  Size)

The purpose or intention of objects like Figs. 50 to 52 is yet unexplained. Mr. Wilson of the Smithsonian Institute, at Washington, in a recent pamphlet states, that

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an Ojibway Indian had informed him they were employed in playing a game of chance. This sage Indian affirmed that several of them were put into a vessel and shaken up. The vessel was then inverted like a dice-box, and the count was reckoned for or against the player, in accordance with the number found standing or fallen when the vessel was removed. There is more than one reason for believing that the Ojibway was a mere guesser at truth, and a very poor guesser too. 1st, because the bases of some are rounded off so much, or are so narrow, that it requires careful adjustment to make them stand at all. 2nd, many are top-heavy and therefore easily overbalanced. (Fig. 51 is illustrative of this,

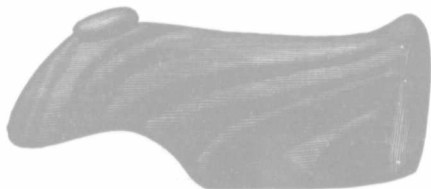


Fig. 51. ( $\frac{1}{2}$  Size.)

and of the convex base.) In the third place, what is perhaps the strongest reason why these objects were not so employed, consists in the fact that they seldom show any signs of abrasion. On the contrary, they are, of all relics those that are most frequently found in the best state of preservation. Other reasons might be adduced, as, for example, that these bird-forms are chiefly made of slate, or some equally fragile material. Fig. 50 however, is an exception to this, it being formed of huronite, a very hard and refractory kind of stone. Our collection contains another of these bird-forms, made from the same material.

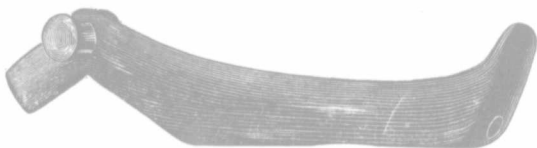


Fig. 52. ( $\frac{1}{2}$  Size.)

In Figs. 50 and 52 the eye pieces stand out from the head like cuff buttons having a long and substantial stalk.

Fig. 51 is the only specimen of the kind I have seen having a projection on the crown. These three are from the township of West Williams. Fig. 50 is from the farm of Mr. Archibald McEwan; Fig. 51 from that of Mr. W. H. Johnston, lot 9, con. 21; and Fig. 52 from Mr. Robert Gray's property, on the 18th concession. They are part of the Matheson collection.

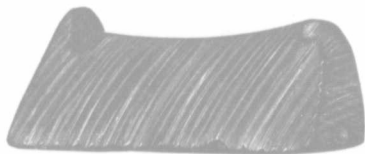


Fig. 53 ( $\frac{1}{2}$  Size.)

Forms similar in material and construction but without any pretence at the imitation of birds or other animals are not uncommon. Fig. 53 is an example, but many of

them are quite plain, being flat on one side, and round on the other, with the ends at right angles to the sides. In every case these and the bird-forms are perforated at each end of the base or flat side, the holes being bored diagonally as in Fig. 53, but where bars are formed across each end, as if in imitation of feet, the holes penetrate these in the middle and at right angles to them in the direction of the object's longer axis.

Schoolcraft described all such specimens (Figs. 50 to 53) as knife-handles, but as no blades have ever been found showing any arrangement for attachment to articles of this sort, it must be concluded that this was not their purpose.

It seems more probable that they and the perforated tablets—perhaps also the stone tubes—were worn partly as articles of personal adornment and partly as amulets or luck-stones, and we can ill afford to smile at the superstitions of the aborigines in this or any other respect so long as we have among ourselves persons who keep coins (known as pocket-pieces) for luck; who carry horse chestnuts to ward off rheumatic attacks, and who suspend old horse-shoes over their doors, for what?



FIG. 54. ( $\frac{2}{3}$  Size.)

Fig. 54 is one of the incomprehensibles. Although small and unfinished a good deal of labor has been spent upon it. The material is that light grayish-blue slate, so much in favor for perforated tablets, and what we call "ceremonial" weapons. An oval cavity has been made on the upper side, and at the end facing us in the cut a beginning has been made in the carving of a human face. But the further end is the most instructive part of this object, for there we are able to perceive the method employed to detach it from another piece. A thin flake of flint has been used as we would use a file to make a deep incision all round, and when the part has been sufficiently weakened the two pieces have been forcibly broken.

It should not be omitted to state that a hole has been bored through this stone from the bottom of the cavity already mentioned.



FIG. 55.

Another slate object is shown as Fig. 55. It measures three by two-and-a-half inches, and looks as if it had been intended for a pipe. Boring has been done from both ends, but the holes have not met. It was picked up on lot 18, con. 6, McGillivray Township, the farm of Mr. Wm. Meikle.—Matheson Collection.

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FIG. 56 (nearly full size.)

The smallest example of the banner stone in our collection is figured above. With the exception of a piece off one point it is perfect. It was found in the Township of Vaughan, in this county, and was presented to us by Dr. Orr, of the Village of Maple. The doctor is an enthusiastic collector, and has in several ways shown his good feeling towards our museum.

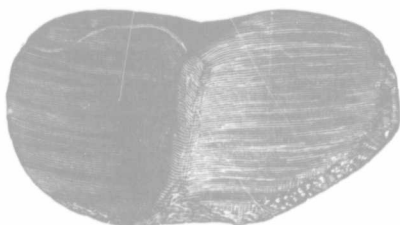


FIG. 57.

An unfinished specimen of slate, winged relic is shown at Fig. 57. It is valuable chiefly as another proof that the Indians did not perforate their work until it was almost or wholly finished. The presence of a few flaws on this specimen at critical places may have led to its rejection by the maker. It was presented to us by Dr. Craig of Lawrenceburg, Indiana, but came from Kentucky.



FIG. 58.

Fig. 58 is from our North-West Territory. Weapons of this kind are still in use among the Indians of Manitoba and more western districts; or perhaps it would be more

correct to say that such articles are now mainly manufactured for sale as curiosities. With the disappearance of large game, skull-crackers of this description have become useless. The head is commonly fashioned from quartz or some other hard kind of stone. Generally they are about as accurately formed as if they had been turned. A groove is cut round the middle, and a thong of raw-hide encircling this and being bound tightly to the handle keeps the head firmly in position. The heads are from four to six inches in length and from one-and-a-half to two-and-a-half inches in diameter. The handle, including its leather covering, seldom exceeds three-fourths of an inch in diameter and is usually about three feet long. A foot or more of loose raw-hide extends beyond the handle. Besides being ornamental this was useful for wrapping round the hand before grasping the shaft, giving a much firmer grip. Since Fig. 58 was engraved we have been presented by the Rev. John McLean, M.A., of Fort McLeod, with a very handsome modern specimen of the "tommy-stick," as such a weapon is sometimes called. It is highly finished, and a pattern cut in the stone has been inlaid with lead. Mr. McLean has, besides this, presented the Museum with a large number of valuable articles illustrative of modern life among the Blood Indians, connected with whom he has resided for nine years. Further reference to these articles must be deferred until the issue of the next report, as they are not now available for description.

## BONE.

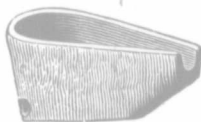


FIG. 59.

Among the articles of Eskimo manufacture mentioned in last report as having been presented by F. F. Payne, Esq., we have a set of "men" resembling dominoes, a number of carved figures representing a fish, a bear, a seal, a goose and two human beings. Besides these were a comb, a thimble, some ornaments and a powder measure—all made of bone. The last mentioned is illustrated nearly full size at Fig. 59.

## SHELL.



FIG. 60 (½ Size.)

Nothing affords better evidence of the widely-extended wanderings of the Indians

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than we find in ornaments of shell made from species whose habitat is more than a thousand miles distant from where the manufactured articles are picked up. Valves of our own unios are often found in graves and ash-heaps, but scarcely any labor seems to have been spent upon them—they were probably regarded as too fragile for either use or adornment.

Large and strong conches from southern seas were highly prized, and some of the finest Indian scroll patterns have been wrought on broad pieces of these. No elaborately-worked specimens have as yet fallen to our lot, but we possess several plainly-made articles. Fig. 60 is part of a find made in 1849 by a Mr. John McDowell when excavating a cellar near Blackfriars bridge, London, Ontario. Many other fine specimens (all of which we procured from Mr. Matheson) were found in this grave. Those of shell included three whole "gorgets," one of which is represented in Fig. 60; two halves of others somewhat smaller; one large spoon-like piece made from what must have been nearly a third of the outside whorl; a small and neatly-finished heart-shaped ornament (all these were perforated) a large bead made from the columella; and eight pieces of wampum.

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FLINTS.



FIG. 61.

In Fig. 61, from Pike's Farm, Wolfe Island, we have an excellent illustration of the dexterity possessed by the Indians in the manipulation of flinty substances. Not only is this specimen as nearly as possible symmetrical, but it is surpassingly thin, for although eight and a half inches long, it barely averages one-fourth of an inch in thickness. The edges are sharpened by chipping mainly from one side.

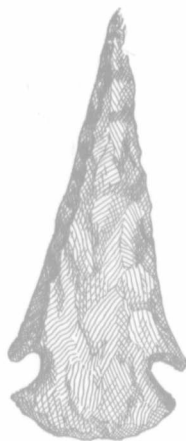


FIG. 62.

A unique specimen, in many respects, is shown at Fig. 62. Though less than three inches in length, it is almost as thick as Fig. 61. The sides are as nearly flat as it is in the nature of flint to be made, and the edges are chipped at such an angle as to make a cross section as nearly as possible a rhomboid. Flints so chipped have been regarded as "rotary" arrows, on the supposition that the intention of the angle was to make the weapon revolve in its flight,—a sort of aboriginal idea of "rifling," in fact, but that seems to be a little too far-fetched. It is more likely that the peculiarity, when it occurs, is owing to the want of ambi-dexterity on the part of the maker, unless, as is probable, say in the case of Fig. 62, the flint was intended for a drill rather than a missile. The projections at the base can hardly be regarded as barbs, because the sides of the neck project so far that when this head was attached to a shaft or handle the hollows would be completely filled with the material employed to fasten it on. It was presented by Mr. E. T. Hummell, Decatur, Alabama.

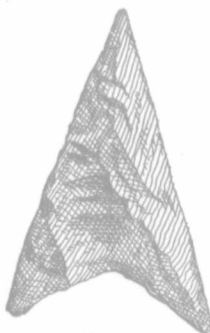


FIG. 63.

A somewhat unusual form of arrow-head is seen at Fig 63. The notched base combines the wedge method of insertion with the barbed form. This type of weapon is more common in the Central States than in Ontario.

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FIG. 64.

Fig. 64 is a fine example of the serrated edge. It is from near Lawrenceburg, Indiana, and was presented to us by Dr. Collins, of that city.

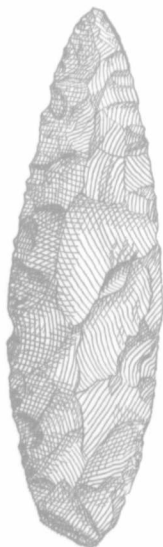


FIG. 65.

Fig. 65 represents the largest chipped implement in the museum. It measures eleven and a half inches in length. It is made of hard cherty limestone, and shows signs of having been in use for digging (?), as the ridges between the flakings are worn down slightly.



This magnificent specimen formed part of the handsome collection presented by Mr. James Dickson, P.L.S., of Fenelon Falls.

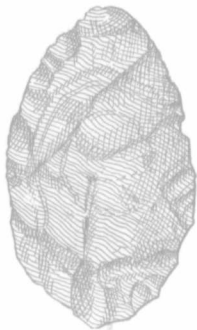


FIG. 67.

Fig. 67 is a large leaf-shaped and roughly dipped "flint," from Pike's farm, Wolfe Island. It is six inches and a quarter long, by four inches wide. If found in Europe it would be regarded as paleolithic, but as copper-beads and many highly finished stone weapons were found along with this specimen the inference is that all were produced contemporaneously. Another specimen from the same locality is made of similar material (both showing a nucleus) and is much better finished, besides being provided with a neck for attachment to a handle.



FIG. 68.

Fig. 68, scarcely inferior in size, is also from the same farm. The material, however, is of a finer quality, and the chipping has been more carefully done. It is about five inches and three quarters long and nearly four broad.

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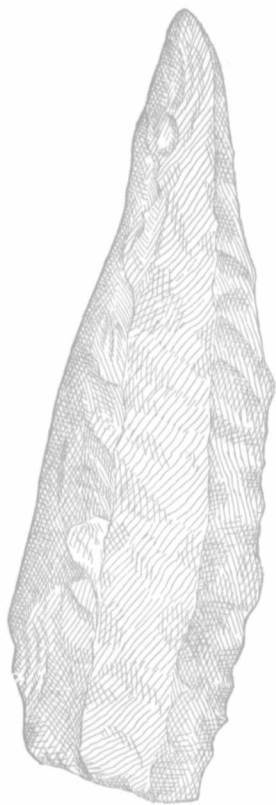


FIG. 69.

Among the specimens presented by Mr. Ransom, of Hitchin, few are more instructive than the one figured at 69. It represents an enormous flint cone, ten inches long, from which large chips have been flaked for tool making. Fig. 69 is from Persigny, a locality that has yielded many valuable paleolithic relics.

## CARVED HEAD.



FIG. 70. (Full Size.)

Fig. 70 is as beautiful as it is remarkable. Almost black, and apparently carved from a piece of limestone, one is struck at first sight both with the design and the quality of the workmanship. The head dress is quite unlike what we would suppose an Indian to model, and the conception of the head itself is different in every respect from the normal aboriginal attempts to represent human features. The half-finished appearance of the under side of the neck gives us the idea that the head might at one time have formed part of a whole figure. A hole is bored through piece from below the chin to the top of the cap, immediately above the forehead. This specimen is from lot 34, con. 7, Beverley, the farm of Mr. Jas. Dwyer.

## TABLETS.



FIG. 71.

Fig. 71 represents the celebrated Gest or Cincinnati Tablet. It is five inches long,

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three broad at each end and half an inch thick. The material is a light brown sandstone of close texture. Quoting from Mr. Robert Clarke's pamphlet on the "Prehistoric Remains at Cincinnati," I find that Mr. E. G. Squier, a good archaeological authority, described this relic in 1848 as follows: \* \* \* "The figures are cut in low relief (the lines being not more than one-twentieth of an inch in depth) and occupy a rectangular space four inches and two-tenths by two and one-tenth wide. The sides of the stone, it will be observed, are slightly concave. Right lines are drawn across the face, near the ends; at right angles and exterior to these are notches, twenty-five at one end and twenty-four at the other. Extending diagonally inward are fifteen longer lines, eight at one end and seven at the other. The back of the stone has three deep, longitudinal grooves, and several depressions, evidently caused by rubbing—probably produced by sharpening the instruments used in the sculpture. \* \* \* \* It will be observed that there are but three scrolls or figures—four of one description and two of each of the others. Probably no serious discussion of the question, whether or not these figures are hieroglyphical, is needed. They more resemble the stalk and flowers of a plant than anything else in nature. What significance, if any, may attach to the peculiar markings or graduations at the ends, it is not undertaken to say. The sum of the products of the longer and shorter lines ( $24 \times 7 + 25 \times 8$ ) is 368, three more than the number of days in the year; from which circumstance the suggestion has been advanced that the tablet had an astronomical origin and constituted some sort of a calendar."

Mr. Squier then goes on to suggest that the tablet was probably only a stamp, such as have been found "in Mexico and in the mounds of the Mississippi" made "of burned clay, the faces of which are covered with figures, fanciful or imitative, all in low relief like the face of a stereotype plate. These were used in impressing ornaments upon the clothes or prepared skins of the people possessing them." Dr. (now Sir) Daniel Wilson in "Pre-historic Man," vol. 1, page 175, after criticising the astronomical and stamp theories, proceeds: "But whatever theory be adopted as to its original object or destination, the series of lines on its two ends have justly attracted attention, for they constitute no part of the device and can scarcely be regarded as an ornamental border. Possibly in them we have a record of certain scales of measurement in use by the mound builders; and if so, the discovery is calculated to add fresh interest to our study of the geometrical structures, which, far more than great mounds, are the true characteristics of that mysterious people."

A recent essayist in the "Journal of the Cincinnati Society of Natural History" for January, 1887, after demonstrating to his own satisfaction the phallic origin and interpretation of the design and the astronomical intention of the lines and spaces, concludes, "Thus we have the exact descriptions of these tablets [the Richardson and the Gest or Cincinnati.] The numbers shown on these are familiar as those used in the measures of the Mound Builder works in which the tablets were found; also as periods of lunar and solar time, and especially lunar time, as marking the natural periods of menstruation, quickening, viability and gestation. The relationship becomes closer when we find that the Gest Tablet, as to its size, has special measures from the same unit or standard with the Gridley stone. They are: Length, 5 inches; least breadth, 2.50 inches; greatest breadth, 3 (2.99) inches, with two chords of 4.50 inches each."

Whatever may have been the purpose of this tablet, if, indeed, it had any beyond caprice or whim on the part of the maker, it is, at all events, a genuine relic. Fortunately the evidence in its favour is too strong to be put aside by even the most iconoclastic.



FIG. 72.

As if to "make assurance doubly sure," however, on this point, the Clarke or Waverly Tablet has been discovered in the collection of Dr. W. R. Hurst, of Piketon, Ohio, where it seems to have been regarded of so little value that its broken parts were not even placed together.

Its corroborative testimony in favour of the Cincinnati Tablet cannot be over-estimated. Fig. 72, which is little more than half the full size, gives a fair idea of its appearance. That the spirit of the design corresponds with that of the other is manifest—there is only less of it. The piece of stone is barely half as thick as in the Cincinnati specimen, and is not so well preserved at the edges, probably on that account.

This tablet is now the property of Mr. Robert Clarke, publisher of Cincinnati, to whom we are indebted for casts of both these fine specimens.

#### COPPER.

Of all the material employed by the Indians in the production of ornaments and implements, native copper is among the rarest. It has been asserted in a recent publication that the presence of objects formed from this metal in its virgin condition over so large an area of North America in no wise argues communication on the part of the natives with the Lake Superior deposits. Enough copper, it is said, may be found as "drift," from which all the objects made by the Indians, might easily be made. While it may be acknowledged that drift copper is occasionally found, it must, at the same time, be affirmed that it is exceedingly rare. I have not heard of a single instance in Ontario, and the chances now-a-days are millions against one as compared with the opportunities afforded during the pre-historic period when forest-growth covered the country and when the ground was littered with dead and decaying vegetable matter. It is absurd to regard distance as any barrier when we find here sea-shells from the distant south. As well, too, might it be argued that pipes of catlinitite discovered in Ontario, prove no connection with the famous pipe-stone quarries of the North-West. That copper was brought here from Lake Superior there can be little, if any, doubt.

In an article on "Ancient Society in Tennessee," by G. P. Thruston, in that excellent publication *The Magazine of American History*, the writer speaking of what is taken from the mounds of his State says, "Among the treasures found are a number of articles indicating commercial development, a pipe made of 'red pipestone,' or catlinitite, found

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only in Dakota Territory, more than a thousand miles distant; native copper from the shores of Lake Superior, ornamented sea-shells from the Gulf and south Atlantic coasts, mica from North Carolina, exquisite polished implements of cannel coal, pearls from the southern rivers, implements of polished hematite from distant iron mines, and of steatite and quartz from the Alleghany range."



FIG. 73. (Full Size.)

From the Pike farm on Wolfe Island, we have upwards of one hundred copper beads. As may be seen from Fig. 73, which illustrates fourteen of them, they vary considerably in size. They are in excellent preservation. Perhaps this is on account of their great thickness in proportion to the size of the holes. Along with these were three spike-like specimens, one of which is shown in the illustration. The eye is formed by the end being bent. In our show-case, the beads and the three long pieces are strung to form a necklace, the latter at nearly equal distances apart; but I have not been able to learn how far this arrangement corresponds with the way they were disposed when found. Altogether, these form a most valuable addition to our very modest collection of copper articles.



FIG. 74.

This cut represents nine cylindrical copper beads just as they were found in the Tremont Park mound, Tidd's Island. They were lying on a piece of the original hide or 4 (C.I.)

leather to which they had been attached, and I was careful not to disturb them. They are made of beaten or leaf copper rolled into their present shape. In length they measure from three-fourths of an inch to an inch, and vary from three-sixteenths to five-sixteenths of an inch in diameter. The fine thongs by which they were sewn to the hide are still adherent to the under side.



FIG. 75.

Fig. 75 was found by Mr. Samuel Haskett, on lot 23, con. 4, Biddulph township, and formed part of the Matheson collection.

It differs but little in pattern from some we had before, but it is, perhaps, specially interesting from the fact that a few specks of pure silver may be easily detected on the surface, thus affording proof (although none is required) that the material is native or virgin.

It is four and a half inches long, and one inch and a half wide at the cutting edge.

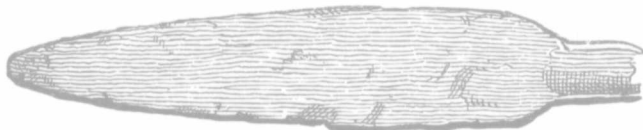


FIG. 76.

This good specimen (Fig. 76) was found by Mr. David Willet, in the township of Burford. It measures eight and three quarter inches long, and at its widest part is an inch and five-eighths. Like some of those described in our last report, it is provided with a fairly well-formed socket to receive a handle or shaft.

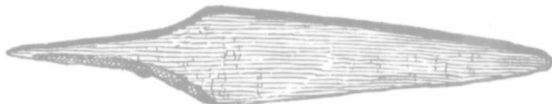


FIG. 77.

Fig. 77 is much smaller, and has a tine instead of a socket. It was ploughed up on lot 15, con. 7. in the township of London, by Mr. James Hodgins. Both of these were procured from Mr. Matheson.

#### HEMATITE (Iron Ore).

The Indians of the territory (much of which formerly belonged to New France) now included in the Central States of the American Union, employed hematite to some extent in the production of weapons and a few other things.

I have never found, or heard of anything being found, of this material in Ontario, although it is more than probable that there are specimens of it in some private collections. The only trace of it I have met with was on Tidd's Island (see report for 1887,

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page 10), where some decomposed ore had apparently been deposited in a grave for the use of the "dear departed" as paint. In the Central States, however, fragments of hard and compact hematite have been patiently ground, often into handsome form, for celts (or for insertion into the heads of clubs), corresponding in size and shape with many weapons found in this country, made for a similar purpose from granite, syenite and other primitive rocks.

We have one from the collection of Mr. Warren K. Moorehead, of Xenia, Ohio. Recently, we have also procured four good ones from Dr. Rear, of this city. They were found in Linn Co., Missouri.

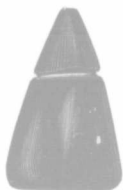


FIG. 78.

Fig. 78 is of the same material, beautifully formed. A cross section is circular. The slight groove, one-third of the length from the top, suggests the idea of suspension, and the specimen may have been a sinker. It was found near Columbus, Ohio, and was presented by Master C. D. Pettibone, of Cincinnati.

#### TYPES OF RECENT IRON AXES.

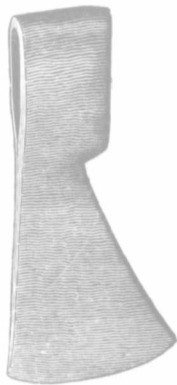


FIG. 79.

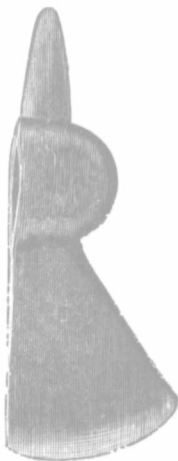


FIG. 80.

Immense numbers of cheap iron axes or tomahawks were imported to America for distribution among the natives "for value received" no doubt. Poor tools as these were,



few of them having a steel edge, they were still greatly superior to the former implements of stone or even copper, and were accordingly highly prized by the Indians. Fig. 79 is the most common type. Sometimes the pattern varies slightly and the size often very much. In what I take to be the oldest forms the hole is round; in those that are more recent it is oval. The stamps of the makers occasionally enables us to distinguish their nationality, but more frequently this is not easy. The billed or poled form is not so common. Fig. 80 is the only one in our collection. It was procured from Dr. Rear, Toronto.

Another form was somewhat similar to Fig. 80, but instead of the pole a pipe-head was fashioned, a small hole communicating with the handle which formed the stem. Axes of this kind were more ornamental than useful.

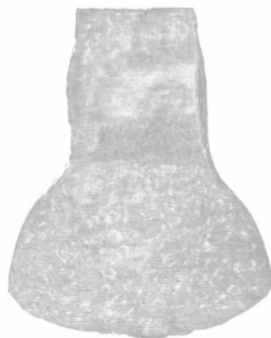


FIG. 81.

The type shown at Fig. 81 resembles the hatchet still used in Britain. Axes of this form are comparatively scarce in Ontario. All of the kind I have seen are steel edged, and therefore much more serviceable than those like Fig. 79. The cut illustrates one found by Mr. Albert Loughead of Nottawasaga.



FIG. 82.

The most modern form of tomahawk is shown at Fig. 82. It approaches closely to the shape of tool so well known by every one to-day. Those however, that

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were served out to the Indians were made smaller than what we call a "chopping axe," the one figured being not more than half the average size of a woodman's implement. No doubt they were intended to be used single-handed.



FIG. 83.

The specimen figured (Fig. 83) is large and coarse, and has the appearance of having been forged by some colonial country blacksmith, who, if he did not actually try "his 'prentice han'" on it, had certainly not made a great many before he produced this one.



FIG. 84.

Indian hatchets were made by Canadian mechanics within the last fifty or sixty years. Two in our collection bear the stamp of the patriot "S. LOUNT." Fig. 83 was in the Matheson collection.

CONTRIBUTIONS TOWARDS A BIBLIOGRAPHY OF THE ARCHÆOLOGY  
OF THE DOMINION OF CANADA AND NEWFOUNDLAND.

[The accompanying list and digest have been prepared by Mr. A. F. Chamberlain, B.A., Toronto, and are the first on this subject that have ever been made covering the ground in question.

It requires only a glance to perceive the great labor involved in the preparation of such a statement as is here presented, and Mr. Chamberlain's sole reward must consist in the consciousness that he has performed a task which will, to a very considerable extent, facilitate reference by students, at the same time that it places on record the work that has been done in this field.

There are, doubtless, other papers and works bearing on the subject—for Mr. Chamberlain modestly speaks of his work as "Contributions,"—and he will be glad to hear from any one who may be able to assist him in making this bibliography as nearly complete as possible. Address, A. F. Chamberlain, B.A., Canadian Institute, Toronto.]

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