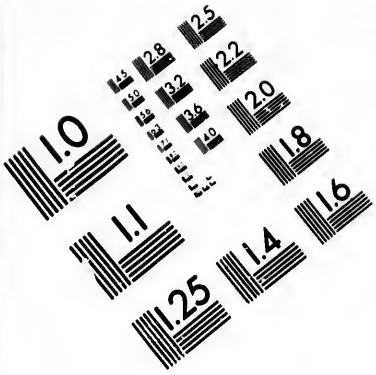

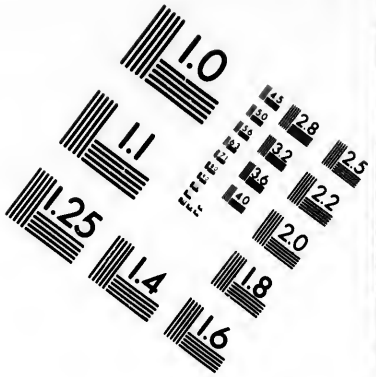

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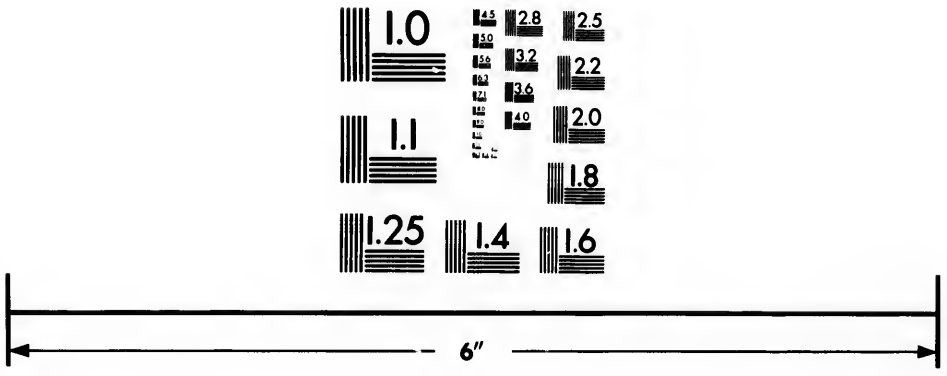

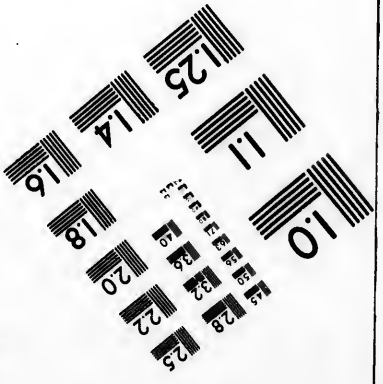

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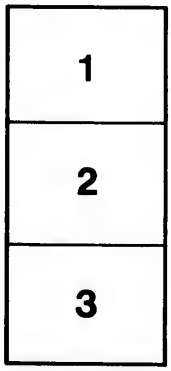

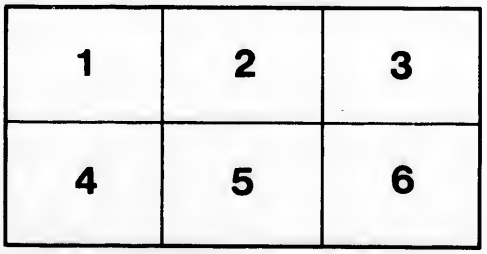

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GE

A

HAND BOOK

OF THE

GEOGRAPHY AND NATURAL HISTORY,

OF

THE PROVINCE OF

NOVA SCOTIA.

PICTOU:

PUBLISHED BY

JAMES DAWSON & SON.

1848.

E. M. M'Donald, Printer.

ADVERTISEMENT.

THE want of cheap Works on the Geography of Nova Scotia has long been felt, espécially by those employed in the education of the young. With the view of supplying this deficiency, the Publishers have lately issued a cheap though carefully prepared Map of the Province; and with the same design, they now offer to the public a compendium of its Geography and Natural History, intended as a companion to the Map, and embracing a mass of information which cannot, in the same condensed and cheap form, be obtained in any other publication.

In preparing the topographical part of the Work, the writer has consulted all the Books previously published on the subject, and has compared their statements with the facts furnished by his own observation, and with the information kindly communicated by friends acquainted with localities which he had not visited. He therefore trusts that the view of the natural features and present condition of the Province, contained in this department, will be found tolerably accurate; though in such a subject it is scarcely possible that errors and omissions have been altogether avoided.

The department of Natural History is, in consequence of the small space which can be allotted to it, necessarily very imperfect, yet, meagre though it may appear, it has cost much labour, and indeed could scarcely have been completed

had not the writer been engaged in collecting materials of this description for other purposes. The uses intended to be served by the introduction of this department, are the promotion of the love and study of nature, and the excitement of a well directed spirit of inquiry into the natural productions and resources of the Province.

In order to facilitate reference, and to adapt the Work to be used as a Catechism when desired, the matter has been arranged in short paragraphs, and the first few words of each, in most cases stating its subject, have been separated from the remainder by a dash (—). The words thus separated, are intended to supply the place of questions: Thus, in the first paragraph, the Teacher may say "The Province of Nova Scotia is situated,"—and pause till the pupil repeats the remainder of the paragraph; or, if preferred, the above words may easily be converted into the *form* of a question. In this way, any Teacher can use the Work as a Catechism, while the awkwardness of the catechetical form and the waste of space which it occasions, are avoided.

The Writer gratefully acknowledges his obligations to several gentlemen who have furnished him with valuable information; and especially to the author of the Meteorological Table, contained in the appendix, from which many of the facts in the article on Climate have been derived.

W. D.

Pictou, January, 1848.

CONTENTS.

CORRECTION.—When the first sheet of the Work went to Press, the writer had overlooked the census taken in 1838. This renders necessary the following corrections and additions:—

Page 7, 2nd Paragraph, omit the words "the date of last census."

Page 14, Population of Digby, for "9000" read 12000. Its population in 1838 was 9269.

Page 15, Population of Yarmouth, in 1838, 9189.

Page 16, Population of Shelburne, for "7000" read 9000. Its population in 1838 was 6801.

GEOGRAPHY AND NATURAL HISTORY OF NOVA SCOTIA.

Section I.—Geography.

The Province of Nova Scotia is situated—on the eastern side of the continent of North America, between North latitude 43° 25′ and 47°, and between West longitude 59° 40′ and 66° 25′.

It is—one of the Provinces of British North America. It was first colonized by the French, by whom it was called Acadie or Acadia. It was finally ceded by France to Great Britain in 1763.

Its principal natural divisions—are Nova Scotia Proper and Cape Breton.

NOVA SCOTIA PROPER.

Nova Scotia Proper—is a peninsula of a somewhat triangular form, connected with the mainland of North America by an isthmus sixteen miles in breadth.

It is bounded—on the north-east and east by Northumberland Straits, St. George's Bay and the Gut of Canseau; on the south and south-east

by the Atlantic Ocean; and on the north-west by the Bay of Fundy, Chiegnecto Bay and the Province of New Brunswick.

Northumberland Strait—is a part of the Gulf of St. Lawrence, separating Nova Scotia from Prince Edward Island.

St. George's Bay—is an arm of the Gulf of St. Lawrence, included between the eastern part of Nova Scotia and the western part of Cape Breton.

The Gut of Canseau—is a strait about one mile in breadth, separating Nova Scotia from Cape Breton, and connecting the Gulf of St. Lawrence with the Atlantic.

The Bay of Fundy—is an arm of the Atlantic, partially separating Nova Scotia from New Brunswick. It is remarkable for the great height of its tides.

Chiegnecto Bay—is an arm of the Bay of Fundy. It is divided into two branches, Shepody Bay and Cumberland Basin. The first of these branches terminates in New Brunswick, and the last in Nova Scotia.

The dimensions of Nova Scotia proper—are, as follow: its length 256 miles, its greatest breadth 100 miles, and its area about 15,600 square miles.

Its surface—is generally undulating or uneven, but not mountainous; it has numerous small lakes and rivers, and the coast abounds in bays and harbours. The scenery, though not grand, is varied and often beautiful.

The principal ranges of hills—are the Cobequid mountains, the hills extending from Cape St. George through Sydney and Pictou counties, and the South and North mountains of Kings and Ann apolis counties. The highest of these is the

Cobequid chain, which attains an elevation of about 1100 feet.

The principal bays and arms of the sea—are Cumberland Basin and Minas Channel and Basin, connected with the Bay of Fundy; St. Mary's Bay, Mahone Bay, Margaret's Bay, Chebucto Bay or Halifax Harbor, and Chedabucto Bay, opening to the Atlantic; and St. George's Bay, Tatamagouche Bay and Bay Verte, on the coast of the Gulf of St. Lawrence.

The population—in 1827, the date of the last census, was 123,848; it is now about 200,000.*

CAPE BRETON.

Cape Breton—is an island of a very irregular form, lying on the north-east of Nova Scotia proper.

It is bounded—on the north-west by the Gulf of St. Lawrence, on the south-west by St. George's Bay and the Gut of Canso, and on the north-east and south-east by the Atlantic ocean.

Its dimensions—are as follow: its greatest length 100 miles, its greatest breadth 72 miles, its area about 3,000 square miles.

Its surface—is in general similar to that of Nova Scotia proper. In the northern part of the Island the surface is elevated and uneven; in the

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* No census having been taken for several years, I have calculated the present population of the Province and its several counties, from the increase during the ten years previous to last census, allowance being made, as far as practicable, for the different circumstances of counties in reference to immigration.

southern and eastern parts it is undulating, with some ranges of low hills. The eastern coast is very much indented by arms of the sea, while on the western coast harbours and inlets are rare.

The most important bays and arms of the sea—are the Bras D'Or Lake, which nearly divides the Island into two parts, and communicates with the sea by two channels, the Great and Little Bras D'Or; Aspy Bay, Sydney harbour, St. Ann's Bay, Miré Bay, Gabarus Bay, and St. Peter's Bay, all opening to the Atlantic.

The population of Cape Breton—is even less accurately known than that of Nova Scotia, but may be estimated at 50,000.

POLITICAL AND JUDICIAL INSTITUTIONS.

THE EXECUTIVE.

The chief Executive Officer—is the LIEUTENANT GOVERNOR, appointed by the crown, of which he is the immediate representative in the colony.

He administers the Government—with the advice of an EXECUTIVE COUNCIL, usually consisting of nine members, appointed by the crown, but whose continuance in office depends on the wishes of the people as expressed by their representatives.

The Governor has the power—of appointing the Judges of the Courts of Common Law, the Custos and Magistrates of the Counties, and generally all such officers as are not usually appointed by the British Government. These last he can also appoint temporarily, till the appoint-

ments in Britain are made known. He can pardon criminals, except in cases of murder or high treason, and has the power of calling General Assemblies.

The Governor may also act—as commander-in-chief, in which capacity he has the command of the militia; and,if a senior officer, of the army within the Province.

LEGISLATIVE BODIES.

The Legislature of the Province—consists of two branches, the Legislative Council and the House of Assembly.

The LEGISLATIVE COUNCIL—consists of members appointed for life, by the Crown. It has the power of rejecting or amending Bills sent to it by the House of Assembly, and also of originating Bills, which must, however, be submitted to the Assembly. It cannot originate money bills.

The HOUSE OF ASSEMBLY—consists of members elected every four years, by the counties and townships. It has the power of investigating the public accounts, appropriating the Provincial revenue, levying taxes,and in general of legislating on any of the internal affairs of the Colony, which may be brought under its notice by the Government, its own members or the petitions of the people.

The acts of the Legislative bodies—are subject to the approval or rejection of the Government of Great Britain.

JUDICIAL INSTITUTIONS.

The principal Courts of Justice—are the Court of Chancery, Court of Error and Appeals, Supreme Court, Court of Vice Admiralty, Probate Court, Court of Marriage and Divorce, Court of General Sessions, and Justices' Courts.

In the Court of Chancery—the Lieutenant Governor is chancellor; but the Master of the Rolls is the acting and responsible Judge. The duty of this Court is to decide causes which cannot be justly settled by the strict rules of common law. An appeal lies from the decision of the Master of the Rolls, to the Chancellor and the Judges of the Supreme Court, and from these to the Queen in Council.

The Court of Error and Appeals—is formed of the Governor and Council; before whom judgments amounting to £300 and upwards may be reviewed. An appeal lies from it to Her Majesty in Council.

The Supreme Court—consists of one Chief Justice and four assistant Judges. Its jurisdiction extends to all criminal and civil suits, not including debts under £5, except in cases of appeal from Justices' Courts. Its proceedings are regulated by the forms and rules of common law.

The Court of Vice Admiralty—has one Judge, holding a commission from the Governor. It decides maritime causes and the disposal of prizes taken in war, and has jurisdiction over capital offences committed upon the high seas.

The Court of Probate—relates to the disposal of the estates of deceased persons. The Governor is the head of this Court; but Surrogate

Judges in each of the counties, are appointed to transact its business.

The Court of Marriage and Divorce—consists of the Governor and Council, and has jurisdiction over all matters relating to prohibited marriages, matrimonial rights, and divorce.

The General Sessions—are local courts held in each county, by the Justices and Grand Jury, for the regulation of county taxes and other local affairs.

Justices' Courts—have power of adjudication on debts not exceeding ten pounds. When the debt does not amount to three pounds, they may be held by one Justice; when it exceeds that amount, two justices are required to form the court. An appeal lies from them to the Supreme Court.

The Justices have also power—to investigate trespasses committed upon lands, where the titles to the lands do not come in question; they are also empowered to institute process at the suit of the Crown, against persons committing an assault and battery, and at their discretion to bind parties over to appear at the next sitting of the Supreme Court, or to fine them in any sum not exceeding two pounds, with costs. From this decision no appeal lies to the Supreme Court, except by a writ of that court ordering the cause to be brought before it.*

THE CIVIL DIVISIONS OF NOVA SCOTIA.

Are Circuits or Divisions, Counties and Townships.

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* Technically called a Writ of Certiorari.

Circuits or Divisions—Embrace several Counties, and have reference only to the sittings of the Supreme Court. There are four of these Circuits.

Counties—are the most important civil divisions. Each County sends representatives to the House of Assembly, has a Sheriff and a Bench of Magistrates, has two sittings of the Supreme Court in each year, and has the power of levying taxes within its own limits.

Townships—are subdivisions of Counties. Most of them were originally tracts of land granted to companies or associations, for the purpose of settlement. They can assess themselves at Township meetings for the support of the poor, and some of them have the privilege of sending a representative to the Assembly.

The Counties are in number—seventeen, fourteen of which are in Nova Scotia proper and three in Cape Breton.

The names of the Counties are—

Digby,	Colchester,
Yarmouth,	Cumberland,
Shelburne,	Pictou,
Queens,	Sydney,
Annapolis,	Guysborough,
Kings,	Inverness,
Lunenburg,	Richmond,
Hants,	Cape Breton.
Halifax,	

COUNTIES OF NOVA SCOTIA PROPER.

1.—THE COUNTY OF DIGBY.

Digby is bounded—on the North-west by the

Bay of Fundy; on the West by the Atlantic; on the South by the county of Yarmouth; on the East by the county of Annapolis and Annapolis Basin.

The largest indentation in its coast—is St. Mary's Bay, which is separated from the Bay of Fundy, by the narrow peninsula of Digby Neck and the islands at its extremity.

The Islands of this County—are Long Island and Briar Island, separated from each other by the strait named Grand Passage, and from Digby neck by the Petit Passage. Briar Island is the most western part of Nova Scotia.

Its principal river—is the Sissiboo, a stream of considerable size, running into St. Mary's Bay. It is navigable to the distance of four miles from its mouth, and forms a good harbour.

Its chief Towns and Settlements—are Digby, the county town, on the west side of Annapolis Basin, Weymouth and New Edinburgh at the mouth of Sissiboo river, Westport on Briar Island and Clare on the western coast.

The soil of this county—is of various quality. On Digby Neck it is dark coloured and fertile; on the isthmus between St. Mary's Bay and Annapolis Basin, usually red and generally fertile; in the remainder of the County it is of moderate fertility, though often hilly and stony. At the head of St. Mary's Bay there is an extensive tract of marsh land.

The principal exports of Digby—are salted fish, agricultural produce, lumber and cord wood.

The Townships of this county—are Digby and Clare, each of which sends a representative to the Assembly.

The first settlers of Digby—were Loyalist from the United States and French Acadians

The former occupied the northern part of the county. The latter, who were part of those expelled from the Province and afterwards permitted to return, settled in 1768 on the shores of its southern part, now the Township of Clare.

The population of Digby—in 1827 was 5652. It is now probably about 9000.

2.—THE COUNTY OF YARMOUTH.

Yarmouth is bounded—on the North by the county of Digby; on the West and South-west by the Atlantic; and on the South-east by the county of Shelburne.

Its principal Bays and Harbours—are Yarmouth, Jebogue, Tusket, and Pubnico harbours.

Its principal River—is the Tusket, whose sources are at Lake Wentworth in the county of Digby, and whose course is through a chain of lakes. Its principal branch is named Salmon River.

The Lakes of this County—are very numerous, occurring along the courses of all the rivers and streams. The largest is Lake George.

On its coast—are numerous small Islands. One of these, Seal Island, is the most southern land belonging to Nova Scotia.

The surface of Yarmouth—is though low, agreeably diversified. The soil is generally rocky, but most of it is susceptible of cultivation. Near the rivers there is some marsh land, productive of grass, but inferior to the marshes of the Bay of Fundy.

The principal Towns and Settlements—are Yarmouth, the county town, on the harbour of the same name; Tusket on the east side of Tusket River; Jebogue and Pubnico.

The people of this County are employed—chiefly in the fisheries and navigation, agriculture and the lumber trade are also pursued, though less extensively. The principal exports are fish, lumber, and dairy produce.

The Trade of Yarmouth—is extensive and prosperous; and a larger amount of shipping is owned in the town of Yarmouth than in any other Port of the Province; Halifax excepted.

The Townships of this County—are Yarmouth and Argyle, each of which sends a representative to the Legislature.

The first Settlers of Yarmouth—were French Acadians from Annapolis. They were expelled by the British Government in 1755; but in 1763 were permitted to return, and their descendants still occupy a part of the county, their principal settlement being at Eelbrook.

The first British Settlers—were a few families from New England, who settled at Jebogue in 1761, The town of Yarmouth was founded a few years afterward.

The population of the County—was in 1827, 7135. It is now about 12000.

3.—THE COUNTY OF SHELBURNE.

Shelburne is bounded—on the West by the county of Yarmouth; on the North-east by Queen's county; and on the South by the Atlantic.

Its principal Harbours—are Barrington Harbour, Port La Tour, Cape Negro Harbour, Shelburne Harbour, Jordan River, Ragged Islands Harbour, and Port Hibert. Of the last of these one side only is in Shelburne.

Its largest Rivers—are the Barrington, Clyde

Shelburne or Roseway, and Jordan; the most important of these are the Clyde and Roseway.

Its principal Islands—are Cape Sable Island, which supports a considerable population, Cape Negro Island and NcNutt's Island.

The surface of this county—is low and uneven in the vicinity of the coast; but in the interior there are higher lands. The soil is generally rocky, and in many places there are large barrens and peat bogs. Even in the vicinity of the coast however, there are patches of good land; and in the interior, are larger tracts of fertile soil producing valuable timber.

The principal Towns and Settlements—are Shelburne, the county town, at the head of Shelburne harbour; Barrington on the harbour of the same name; and the Settlements of Ragged Islands and Clyde River.

The principal branch of industry pursued in this County—is the fishery, which is carried on by the inhabitants of all the harbours on the coast, ship-building and agriculture are also pursued to some extent.

The Townships of this County—are Barrington and Shelburne, each of which has a representative in the Assembly.

The first settlers in Shelburne—were a few French families. The first British settlers were 80 families from Nantucket and Cape Cod. who arrived in 1761, '2 and '3.

The Town of Shelburne was founded—in 1783, by a large number of refugee Loyalists from the United States. It afterwards greatly declined, but recently its population and trade have considerably increased.

The population of this County—in 1827 was 4883. It is now probably about 7000.

4.—QUEEN'S COUNTY.

Queen's County is bounded—on the North-west by the county of Annapolis; on the South-west by the County of Shelburne; on the South-east by the Atlantic; and on the North-east by the county of Lunenburg.

The principal Bays and Harbours on its coast —are Port Joli, Port Mouton, Liverpool and Port Medway.

The principal Rivers—are the Liverpool and Port Medway. The first of these is one of the largest in Nova Scotia, and is connected with numerous lakes, one of which Lake Rosignol is the most extensive in the Province. The Port Medway is also a large river, and receives the surplus waters of many considerable lakes.

The soil of this County—is generally stony and unproductive; but in some parts of the county, especially in the interior, are tracts of good soil supporting thriving agricultural settlements.

The exports of Queen's County—are fish and sawed lumber. The trade in these is carried on in all the harbours on the coast; especially in Liverpool and Port Medway.

The principal Towns and Settlements—are Liverpool, the county Town, which is well built and carries on an extensive foreign and coasting trade; Mill village and Port Medway, at the mouth of Port Medway river; and in the interior of the county, Brookfield, Pleasantfield and Northfield.

The Townships of Queen's County—are Liverpool and Guysboro'. The first of these sends a representative to the Legislature.

The first Settlers—were emigrants from Ma

sachussetts, who founded the town of Liverpool in 1760.

The population—in 1827 was 4225; in 1838, 5798. It is now probably about 7000.

5.—THE COUNTY OF ANNAPOLIS.

Annapolis is bounded—on the West by the County of Digby; on the North-west by the Bay of Fundy; on the East by King's County; on the South-east by Queen's and Lunenburg counties.

Its only natural Harbour—is the beautiful sheet of water named Annapolis Basin; there is however a breakwater on the shore of the township of Wilmot.

Its principal Rivers—are the Annapolis, a large river running nearly parallel to the northern shore of the county, and receiving the waters of several considerable tributaries from the South; Allen River and Bear River.

Its surface—is varied and beautiful. It may be divided into three districts differing in their soil and appearance.

The first of these natural divisions—is the elevated ridge of the North Mountain, extending along the coast, and forming the Promontory of Granville. The soils on the flanks of this ridge are generally excellent.

The second—comprises the valley of the Annapolis River, the uplands of which, though light, are often fertile, and adapted to the culture of fruit. It also includes extensive tracts of dyked marsh on the margin of the Basin and rivers.

The third—extends from the valley of the river to the South line of the county, and comprises more than half its surface. It is in general

hilly and in some parts stony, but includes much fertile soil.

The only valuable mineral found in this County—is iron ore, of good quality, which occurs, in a large bed, near the Moose and Nictaux Rivers. and extends between these places. A company was formed in 1825 for working this ore, but the enterprise was afterwards abandoned.

The people of Annapolis County—are employed chiefly in agriculture; and the most important exports are farm and dairy produce, fish and lumber.

The principal Towns and Settlements—are Annapolis, the county Town, which was at one time the capital of the Province, and is the oldest settlement in Nova Scotia, but has never been a very thriving place; Bridgetown, at the head of the tide on Annapolis River and the principal seat of trade; Laurencetown and Clements.

The principal educational Institution—is the Annapolis Academy, founded in 1827 and conducted by two teachers.

The townships of Annapolis—are Annapolis, Granville, Clements, and Wilmot. The two first send representatives to the Assembly.

This county was first settled—by the French, who in 1605 founded the town of Port Royal. Port Royal was destroyed by an expedition from the British colony of Virginia in 1613. In 1629 an unsuccessful attempt at settlement was made by the English, and the Province being shortly afterwards ceded to France, Port Royal again became a French colony. It was retaken by the English in 1656, and again ceded to France by the peace of Breda. In the war which commenced in 1689, several contests between the French and English occurred at Port Royal; but

in 1697, it was again restored to France by treaty. War having been declared in 1701, Port Royal, after two unsuccessful attacks, was taken by a force from Massachussets, and at the peace in 1713, it was, with the rest of Nova Scotia, finally ceded to Great Britain; its name was then changed to Annapolis.

The French colonists were expelled—by the British Government in 1755, and the lands whtch they had left were occupied in 1764 and '65 by emigrants from the older British Colonies, now the United States. The county afterwards received a considerable number of American loyalists and disbanded soldiers.

The population of the county—in 1827 was 9009; in 1838, 11989. It is now about 14000.

6.—KING'S COUNTY,

King's County is bounded—on the West by Annapolis County; on the North by Minas Channel; on the East by Minas Basin; and on the South-east by Lunenburg and Hants counties.

Its principal Rivers—are the Gaspereaux and Cornwallis, both running into the Basin of Minas. The estuaries of these and some smaller streams are the only harbours of the county.

The surface of this county—is beautiful and diversified, and, like the county of Annapolis, may be divided into three natural districts.

The first of these—is the elevated ridge of the North Mountain, terminating in the lofty promontaries of Blomidon and Cape Split. It contains much valuable soil of a very fertile quality, but the surface is often precipitous and stony.

The second district—is the broad and highly cultivated valley of Cornwallis, in which the

soil is a red sandy loam generally fertile. At the mouths of the rivers running through this valley and on the neighbouring shore of Horton, there are about 7700 acres of dyked marsh land of excellent quality.

The third district—lies to the north of the valley of Cornwallis, and is hilly and elevated, but contains much fertile soil, and is in many places thickly settled. The narrow valley of the Gaspereaux river, which runs through this district, is of great beauty.

The principal branch of Industry in this county—is agriculture, and the farms are generally well cultivated and productive.

The principal Towns and Settlements—are Kentville, the county town, on the banks of Cornwallis river; Lower Horton, Cornwallis and Wolfville.

At Wolfville are situated—Acadia College, an institution conducted by three professors, under the control of the Baptist Association of Nova Scotia; and a collegiate academy with two teachers.

King's County was first settled—by the French, who built in Horton a village named Minas, and dyked much of the marsh land of the county. They were expelled with the other French Acadians in 1755.

The first English settlers—were emigrants from Connecticut, who arrived in 1764 and took possession of the lands formerly occupied by the French.

The townships of this County—are Horton, Cornwallis and Aylesford. The two first are represented in the Assembly.

The population of this county—in 1827 was 10208; in 1838, 13709. It is nowabove 16000

7.—THE COUNTY OF LUNENBURG.

Lunenburg is bounded—on the South-west by Queen's county; on the North-west by Annapolis and King's counties; on the North-east by Hants and Halifax counties; on the South-east by the Atlantic.

The principal bays and harbours—are Mahone Bay, a large indentation in the coast, containing numerous islands; Lunenburg harbour, and the estuary of the La Have river.

The largest rivers—are the La Have, Petit and Gold rivers. The first of these is a large river connected with several lakes, the most important of which is Sherbrooke Lake.

In this county is the promontory—of Aspotagon, whose elevation, though not above 500 feet, is greater than that of any other headland on this coast, and makes it a noted landmark to navigators.

The surface of Lunenburg—is in general uneven, but not elevated; and the soil is in most places stony; but on the shores of Mahone Bay, in the vicinty of the town of Lunenburg, and near the La Have river, the soil is often good and well cultivated.

The principal exports—are fish, lumber and cattle; and the shipping employed in carrying these, is in great part owned in the county.

The principal towns and settlements—are Lunenburg, the county town, on the harbour of the same name; Chester on the shore of Mahone Bay; New Dublin, La Have Bridge and New Germany on the La Have river.

The townships of this county—are Chester, Lunenburg and New Dublin. Of these Lunenburg alone has a representative in the Assembly.

Lunenburg was first settled—by Germans and Swiss, invited by the British Government, who founded the town of Lunenburg in 1751. In 1782, Lunenburg was greatly injured by being taken and plundered by American privateers, who took or destroyed property the value of which was estimated at £13000. Chester was settled in 1760 by emigrants from New England.

The population of this county—in 1827 was 9405; in 1838, 12058. It is now about 15000.

8.—THE COUNTY OF HANTS.

Hants is bounded—on the North-west and North by King's County and the Basin of Minas; on the East by the Shubenacadie, which separates it from Colchester; and on the South by Halifax and Lunenburg counties.

The only large indentation in its coast—is the estuary of the Avon river, which receives the waters of most of the rivers of the county.

The principal Rivers—are the Kennetcook, St. Croix and Avon; and the Nine Mile and Five Mile Rivers, tributaries of the Shubenacadie. In consequence of the low level of the greater part of this county, and the height of the tides of the Bay of Fundy, the three first of these rivers and the Shubenacadie river are remarkable for the length of their tidal estuaries, which form the only harbours of this county.

The surface of Hants County—is in general low and gently undulating. In the northern part of the county, however, there are more hilly districts, the most elevated part of which is Ardoise mountain.

The soil—is in all the lower parts of the county, good and often very fertile; and on the estu-

aries of the Avon and St. Croix, there are 2544 acres of dyked marsh of the best quality. In the hilly districts the soil is often stony and unproductive.

The useful minerals of Hants—are gypsum, commonly called plaster, and limestone. The first of these is largely quarried, especially near Windsor and the Shubenacadie, and forms the chief export of the county.

The occupation of the greater part of the people—is agriculture, and the country in the neighbourhood of the rivers, and on some parts of the shore of the Bay, is well cultivated; but in the interior of the county, much valuable land is still unoccupied.

The most important towns and settlements—are Windsor, the county town, on the East side of the Avon estuary; Newport on the Kennetcook river; Maitland at the mouth of the Shubenacadie, Falmouth, Noel and Nine mile river.

The most important educational institutions—are King's College, near Windsor, conducted by two professors, on the principles of the Church of England; and a collegiate Academy.

The townships of Hants county—are Windsor, Falmouth, Newport, Kempt, Rawdon and Douglass. Each of the three first has a representative in the Assembly.

The first settlers in Hants—were the French, who occupied part of the township of Windsor. Their lands, immediately after their expulsion, were granted chiefly to persons residing in Halifax. The other parts of the county were settled between the years 1759 and 1784, by emigrants from New England and the North of Ireland, and by loyalists from the Carolinas and disbanded soldiers.

The population—in 1827 was 8627; in 1838, 11899. It is now probably 14000.

9.—THE COUNTY OF HALIFAX.

Halifax County is bounded—on the West by Lunenburg; on the North by Hants, Colchester and Pictou; on the East by Guysborough; and on the South by the Atlantic.

Its most important Bays—are Margaret's Bay, and Chebucto Bay or Halifax harbour; but beside these there are numerous safe harbours and inlets along the whole coast.

The principal rivers—are the Musquodoboit, which is the largest river in the county; the Middle River of Sheet Harbour; the Sackville River; and the Shubenacadie, which rises in this county, and after passing through a chain of lakes, runs for some distance along the boundary between Halifax and Hants.

The lakes of Halifax county—are generally small. The Grand Lake of the Shubenacadie is the largest.

The surface of this county—is generally uneven and rocky, and in many parts very sterile. On the margins of the rivers, however, especially of the Musquodoboit, there are tracts of good soil; and near the town of Halifax, very stony soils have been rendered productive.

The principal Towns—are Halifax and Dartmouth, both on the harbour of Halifax. The most important agricultural settlements are those of the Musquodoboit river. On the coast are numerous settlements, the people of which are chiefly employed in the fisheries.

The City of Halifax—is the capital of Nova Scotia, and the principal naval and military sta-

tion in the Lower Provinces. It was incorporated in 1841. Its population is about 25,000.

The trade of Halifax—is extensive, as it is the principal depot for the importation of British, European and West Indian goods, and for the export of the produce of the fisheries.

The educational institutions of the City of Halifax—are Dalhousie College, at present closed; St. Mary's College, taught by three professors and an assistant, and under the control of the Roman Catholic Church. There are also several good schools.

The principal public buildings in Halifax—are the Province building, containing apartments for the Legislative Council, House of Assembly, Supreme Court, and the various Provincial Officers; the Government House, occupied by the Lieutenant Governor; Dalhousie College, the Court House, Penitentiary and Poor-house.

The British Government have erected at Halifax—an extensive dockyard for refitting ships of war; barracks for the troops stationed at Halax; and a strong fortification on Citadel Hill, overlooking the town.

The City of Halifax was founded—in 1747, by English, Irish and German emigrants, brought thither at the expense of the British Government.

Dartmouth was founded—in 1750, but in 1756 it was destroyed by the Indians. In 1784 it was again settled by emigrants from Nantucket, most of whom removed in 1793. Since that time its population has gradually increased.

The townships of this county—are Halifax, Dartmouth, Laurencetown and Preston. The first of these has two representatives in the Assembly.

The population of Halifax—in 1827 was 24,876;in 1838, 28570. It is now about 38,000.

10.—THE COUNTY OF COLCHESTER.

Colchester is bounded—on the North and West by Tatamagouche Bay and Cumberland county; on the South-west by Cobequid Bay and the Shubenacadie river; on the South by Halifax county; and on the East by Pictou county.

Its principal hills—are those forming the eastern part of the Cobequid chain, and extending westward from Earlton along the whole length of the county.

Its Bays—are Cobequid Bay, the extremity of the northern arm of the Bay of Fundy; and Tatamagouche Bay on the shore of Northumberland Straits. These bays are the only harbours Colchester county.

Its principal rivers—are the Stewiacke,a large tributary of the Shubenacadie; the Salmon, North, Chiganois, De Bert, Folly, Great Village, Portapique and Economy Rivers, running into Cobequid Bay; French and Waugh's Rivers, running into Tatamagouche Bay.

The surface of Colchester—is very diversified, and has a great variety of soils.

The northern part, bordering on Tatamagouche Bay—is low and level or gently undulating, and the prevailing soil is a fertile sandy loam.

The hilly districts—extending from Earlton along the Cobequid chain, present a succession of ridges and valleys, in their natural state clothed with hardwood forests. The soils are often stony, but in some places are of great fertility.

The part of the county south of the Cobequid ridge—has an undulating surface, generally sus-

ceptible of cultivation, though in some parts light and gravelly. It includes much river intervale, and valuable marsh lands on the shore of Cobequid Bay.

The most valuable minerals of this county—are iron ore, a large deposit of which occurs in the rear of Londonderry township; coal, of which there are small beds in various places; gypsum and limestone.

The principal occupation of the people of Colchester—is agriculture; ship-building and the lumber trade are also carried on, especially at Tatamagouche.

The principal towns and settlements—are Truro, the county town, at the head of Cobequid Bay; Tatamagouche on the shore of Northumberland straits; and the settlements of Onslow, Londonderry, Economy, Stewiacke and Earlton.

The townships of Colchester—are Truro, Onslow and Londonderry, each of which has a representative in the Assembly.

Colchester was first settled—by Acadian French, who cultivated the marshes of Londonderry, Onslow and Truro. After their expulsion, these townships were occupied by emigrants from the north of Ireland and Massachussetts.

The population of Colchester—in 1827 was 7703; in 1838, 11225. It is now about 16000.

11.—THE COUNTY OF CUMBERLAND.

Cumberland is bounded—on the North by Northumberland Straits; on the North-west by New Brunswick, Cumberland Basin and Chiegnecto Bay; and on the South and South-east by Minas Channel and Basin, and the county of Colchester.

Its principal harbours—are Pugwash and Wallace on the north coast; Cumberland Basin, Apple River and Partridge Island on the coast of the Bay of Fundy.

Its largest rivers—are the Hebert, Maccan and Napan running into Cumberland Basin; the Partridge Island river running into Minas Basin; and the Wallace, Philip and Shinimicas running into Northumberland Straits.

Its principal range of hills—is the Cobequid chain, which extends eastward from Cape Chiegnecto till it enters Colchester county. It forms a broad and rather extensive tract of broken and elevated land.

The surface of the northern part of Cumberland—is undulating, and nearly all the land is susceptible of cultivation, though much of it is light and sandy. The best uplands are those near the shore of Northumberland Straits, but near Cumberland Basin there are valuable and extensive tracts of dyked marsh.

The southern part of the county—including the hilly districts of the Cobequid chain, and the coast of the Minas Channel and Basin, is generally uneven and stony, but contains some fertile land.

The most valuable minerals of Cumberland—are coal, which occurs at the Joggins, Maccan River and Spring Hill; gypsum, limestone and sandstone.

The principal branches of industry pursued in this county—are agriculture; shipbuilding and lumbering, which are extensively carried on especially on the northern coast; and the quarrying of grindstones, which is pursued at the Joggins.

The principal towns and villages—are Amherst, the county town, near Cumberland Basin; Pug-

wash and Wallace on the shore of Northumberland Strait; Mill Village and Parrsboro, on the Minas Basin.

The townships of Cumberland—are Amherst, Wallace and Parrsboro'. The first only has a representative in the Assembly.

The first settlers in Cumberland—were French emigrants, some of whose descendants still remain in the county. The earliest British settlers were emigrants from the New England States, Yorkshire and the North of Ireland.

The population of Cumberland—in 1827 was 5416; in 1838, 7572. It is now about 9000.

12.—THE COUNTY OF PICTOU.

Pictou is bounded—on the South-west and West by Colchester; on the North by Northumberland Strait; on the East by Sydney county; on the South by Halifax and Guysborough counties.

Its principal harbours—are River John, Carriboo, Pictou and Merigomish.

Its largest rivers—are River John, the East, Middle and West Rivers of Pictou; Sutherland's, French and Barney's Rivers.

The surface of this county—is in general undulating or rising into low hills. In the western part of the county, is a group of hills which are outliers of the Cobequid range; the principal of these is Mount Thom. In the southern part of the county, there is a more extensive hilly district, which though not very elevated, often has a broken and rocky surface.

The soil—in the lower parts of the county, is generally of good quality, and everywhere capable of cultivation. In the hilly districts it is often

stony; but these districts also contain some of the most fertile soils of the county. Pictou contains no marsh lands, but there are valuable intervales on the margins of all the rivers.

The useful minerals of this county—are coal, iron ore, freestone, gypsum and limestone.

The principal exports—are coal; ships and lumber; agricultural produce, especially oatmeal, pork and butter; grindstones and freestone.

The coal exported from Pictou—is procured at the Albion Mines on the East river. The quantity shipped in 1847 was 80,000 chaldrons. The coals are conveyed from the mines to the loading ground, on the south side of Pictou harbour, by a railway.

The principal towns and villages—are Pictou, the county town, on the north side of Pictou harbour; New Glasgow and the Albion Mines on the East River; Bellevue on the River John. The agricultural settlements are numerous and extensive.

The principal educational institution—is Pictou Academy, founded in 1816, and at present conducted by three professors. It is under no denominational control.

The townships of this county—are Pictou, Egerton and Maxwellton. The first of these sends a representative to the Assembly.

The first settlers in Pictou—were emigrants from Maryland, who arrived in 1765. They were joined, eight years afterward, by 30 families from the Highlands of Scotland. The greater part of the present population consists of Scotsmen and their descendants.

The population of Pictou—in 1827 was 13,949. in 1838, 21,449. It is now about 26,000

13.—THE COUNTY OF SYDNEY.

Sydney is bounded—on the North and East by Northumberland Strait, St. George's Bay and the Gut of Canseau; on the West by Pictou county; und on the South-east by Guysborough.

The principal harbours—are Antigonish, Pomket, Tracadie, Harbour Au Bouchè; there is also a pier for the shelter of small vessels at Arisaig.

The largest rivers—are the South, West and Right's River, ruuning into Antigonish harbour; and Pomket River, running into the harbour of the same name.

The principal range of hills—is that extending westward from Cape St. George, and connected with the hills of Pictou county.

The only considerable lake—is Lochaber or College Lake, a beautiful sheet of water five miles in length.

The surface of Sydney—presents a large and fertile valley of a triangular form, occupying the centre of the county, and bounded on two sides by broken and hilly districts which meet in the western part of the county; these hills are not of great elevation, and contain many tracts of good soil.

The useful minerals of Sydney—are gypsum and limestone; the former of these is exported, though not in large quantity.

The principal branches of industry—are agriculture and the fishery. The principal exports are cattle, sheep, grain and fish.

The most important towns and settlements—are Antigonish, the county town, situated at the confluence of the Right's and West Rivers, Arisaig, Tracadie, South River and Lochaber.

The townships of Sydney—are Dorchester

or Antigonish, Arisaig, Tracadie and St. Andrews.

The first British settlers in Sydney—were disbanded soldiers who were located there in 1784. The greater part of the present population of the county, consists of emigrants from the Highlands and Islands of Scotland, and their descendants.

The population of Sydney—in 1827 was 7103. It now probably exceeds 12000.

14.—THE COUNTY OF GUYSBOROUGH.

Guysborough is bounded—on the South-west by the county of Halifax; on the North by Pictou and Sydney counties; on the North-east and East by the Gut of Canseau and Chedabucto Bay; and on the South by the Atlantic.

Its principal harbours—are Milford Haven and Crow Harbour in Chedabucto Bay; Canseau, Whitehaven, Country Harbour, St. Mary's River, Liscomb Harbour, Marie Joseph Harbour, and numerous others of smaller size on the Atlantic coast.

Its principal rivers—are the St. Mary's, a river not inferior in magnitude to any in the Province; and Country Harbour River.

The surface of this county—is in the northern part generally cultivable, and in some parts, especially on the East and West branches of the St. Mary's river and on the north side of Chedabucto Bay, both beautiful and fertile. The southern half of the county, including the Atlantic coast and the south shore of Chedabucto Bay, is rugged and uneven, but has some useful soil on the borders of the rivers.

The inhabitants of this county—in places bor-

dering the coast are generally fishermen. In the interior, and especially on the East and West branches of the St. Mary's river, there are thriving agricultural settlements. A considerable quantity of lumber is exported.

The principal towns—are Guysborough, the county town, on the west side of Milford Haven; and Sherbrooke, at the head of the tide on St. Mary's river.

The townships of Guysborough—are Manchester, Guysborough and St. Mary's.

This county was first settled—in 1784, '5 and '6 by loyalists and disbanded soldiers from the United States. Most of these earlier settlements were not very prosperous, and the county made few permanent advances till a later period.

The population of Guysborough—in 1827 was 5657; in 1838, 7447. It is now probably about 9000.

COUNTIES OF CAPE BRETON.

1.—THE COUNTY OF RICHMOND.

Richmond is bounded—on the North-west and North by Inverness county and the Bras D'Or Lake; on the South-west and South by the Gut of Canseau, Chedabucto Bay and the Atlantic; on the North-East by Cape Breton county.

To this county belong—Isle Madame and Janvrin's Island, both situated on the south coast.

Its principal bays and harbours—are the West Bay of the Bras D'Or Lake; St. Peter's Bay and Arichat Harbour.

Its principal rivers—are the Inhabitants and Grand Rivers, both running towards the Atlantic coast.

The surface of Richmond—is generally low, with some slight elevations at the eastern and western extremities of the County. The soil is generally cultivable, the best tracts being on the shore of Bras D'Or Lake and the margins of the rivers.

The principal towns and settlements—are Arichat, the county town, in the Isle Madame; L'Ardoise, St. Peter's and Grand River.

Its townships—are Arichat, Maitland, Lennox and Hawksbury; the first sends a representative to the Assembly.

The inhabitants of this county—are employed chiefly in the fisheries and coasting trade. The agricultural settlements are however increasing in importance. The principal export is fish, which is sent to Europe, the West Indies and the Brazils.

Richmond was first settled—by the French, and a great part of the present population consists of their descendants, the remainder of the people are chiefly emigrants from the Highlands of Scotland.

The population of Richmond—in 1838 was 7667. It is now about 10,000.

2.—THE COUNTY OF INVERNESS.

Inverness is bounded—on the North-west by the Gulf of St. Lawrence; on the West and South-west by St. George's Bay and the Gut of Canseau; on the south-east by Richmond county and the Bras D'Or Lake; on the East by Cape Breton county.

Its principal bays and harbours—are Whykokomagh and Basin St. Deny's, on the Bras D'Or Lake; Ship Harbour, in the Gut of Canseau;

Port Hood, Mabou, Margarie and Cheticamp, on the coast of the Gulf of Lawrence.

The largest river—is the Margarie which issues from Ainslie or Margarie Lake, the largest body of fresh water in Cape Breton, and runs into the Gulf of St Lawrence.

The surface of this county—in the northern part, between Cape St. Lawrence and Margarie, is generally elevated and unproductive. The southern part of the county, is lower and the soil almost everywhere valuable.

The greater part of the population is employed —in agriculture; but the fishery and the lumber trade are also pursued to a considerable extent.

The principal towns and settlements—are Port Hood, the county town, Mabou, Margarie and Cheticamp, on the coast of the Gulf of St. Lawrence; and Ship Harbour in the Gut of Canseau.

The Townships of Inverness—are Port Hood, Canseau, Margarie and Ainslie,

The first settlers in Inverness—were French, but the greater part of the present population consists of emigrants from the Highlands of Scotland, and their descendants.

The population—in 1838 was 13,642. It is now probably about 18,000.

3.—THE COUNTY OF CAPE BRETON.

Cape Breton is bounded—on the North-west and West by Inverness; on the South-west by Bras D'Or Lake and Richmond; on the East by the Atlantic.

Its principal bays and inlets—are Aspy Bay, St. Ann's Bay, the Great and Little Bras D'Or, Sydney Harbour, Miré Bay, Louisburg Har-

bour and Gabarus Bay on the Atlantic coast; and East Arm and St. Patrick's Channel on the Bras D'Or Lake.

Its largest Islands—are Boulardarie Island, between the Great and Litte Bras D'Or; and Scatari, which is the most western part of the Province.

Its principal rivers—are the Mirè; which is properly a long and narrow lake; and Bedeque river.

In this county are the promontories—of Cape North and Cape Enfumé. The former is the most northern point of the Province, the latter said to be the highest headland in Cape Breton.

The surface of this county—is in the northern part elevated and barren; but in the central and southern parts generally undulating and of moderate fertility.

The valuable minerals of Cape Breton county —are coal, gypsum and limestone. The first of these is extensively worked at North Sydney by the General Mining Association.

The principal towns and settlements—are Sydney, the county town, on the harbour of the same name; the Mines, at North Sydney; Bedeque, and various other settlements on the shore of Bras D'Or Lake.

The townships of Cape Breton—are Sydney, St. Patrick's, and St. Andrew's. The first has a representative in the Assembly.

In this county are the ruins—of Louisburg, founded by the French Government in 1720, as their principal naval and commercial station on the coast of North America. It was taken by the British Provincial troops in 1745, restored to the French in 1749; and retaken and destroyed on 1768.

The first settlers in this county—were French. The greater part of the present inhabitants are emigrants from Scotland and Ireland, and their descendants.

The population—is now probably about 20,000. The return in 1838 was 14,111, but it did not include the whole county.

SABLE ISLAND.

Sable Island—is a dependency of Nova Scotia. It is situated between north latitude 44° and 44° 7', and between west longitude 60° 12' and 59° 40'. It is distant from Cape Canseau about 87 geographical miles. Its breadth varies from 1 to 2 miles and its length is 25 miles.

It consists—of sand thrown up by the sea and wind, and forming hillocks, some of which are 100 feet in height. The greater part of its surface is covered with coarse grass, and cranberry and whortleberry bushes; and this vegetation supports a few herds of wild horses and great numbers of rabbits.

Sable Island is best known—as the scene of numerous shipwrecks; its position in the usual track of ships sailing between Britain and Nova Scotia, and the shoals by which it is surrounded, causing it to be extremely dangerous to navigators.

For this reason there are stationed on the Island—a superintendant and several men, who are supported at the joint expense of the government of Nova Scotia and Great Britain, for the purpose of rescuing and aiding shipwrecked seamen.

Section II.—Natural History.

I.—CLIMATE.

The climate of Nova Scotia—is influenced by the position of the Province on the eastern side of the continent of North America, and by the great surface of the northern part of that continent. From these causes, its extremes of temperature are greater than those of countries in the same lacitude, in Europe and the western coast of America.

It is also influenced—by the almost insular position of the Province; which modifies the effects of the preceding circumstances, and renders the climate somewhat less extreme and also more variable than that of Canada.

The extremes and means of temperature—are as follow: the mean temperature of the year is 43° of Fahrenheit's thermometer; the extreme of cold 24° below zero; the extreme of heat 95°, in the shade. There are in the year about 20 nights in which the temperature is below zero, and about 100 hot days, in which the temperature is above

70° in summer or above 62° in the remainder of the year.

The annual amount of rain—is about 41 inches. Of the above quantity about 6½ inches fall in the form of snow, making the annual depth of snow about 8½ feet.

The prevailing winds—are the south-west and north-west, though in early spring easterly winds often continue for some time. The north, north-west and west winds are in summer cool and dry, and in winter intensely cold; the south-west is mild and agreeable, but in spring and autumn sometimes showery and violent; the south and south-east winds are rainy and often stormy, and on the Atlantic coast frequently accompanied by fog. The north-east wind is in summer wet and disagreeable, and in winter brings heavy snow storms.

The first quarter of the year—includes the depth of winter. January is often the coldest month, its mean temperature being usually below 21°. February is seldom warmer than January, and sometimes colder; and March is still cold and wintery, though its mean temperature sometimes rises 8° higher than that of January. The mean temperature of the quarter is 22°, and the weather is generally clear and frosty, with occasional rain and snow storms.

The second quarter—includes the transition from winter to summer. In April the snow and ice of winter generally disappear, migratory birds begin to arrive, and the temperature rises to 35°, though there are still occasional falls of snow. In May the remainder of the migratory birds arrive, the trees put forth their leaves, and sowing is usually completed. In June the country presents the aspect of summer, the trees being

in full leaf and many wild flowers in bloom; and the mean temperature exceeds 50° The mean temperature of this quarter is about 49°

The third quarter—includes the warmest part of summer and the commencement of autumn. July is the warmest month, its mean temperature exceeding 65°, and the heat in sunny days becoming oppressive, though mitigated by occasional showers: wild strawberries ripen. In August the temperature begins to diminish, cherries and other early fruits ripen, and harvest begins. In September the mean temperature falls to about 56°, the nights become sufficiently frosty to destroy tender plants, though the days are still warm, and migratory birds begin to depart. In the latter part of this quarter there are often violent storms; its mean temperature is about 62°.

The last quarter—embraces the autumn and earlier part of winter. In October the temperature falls below 50°, the leaves of the trees change their colours and begin to fall, late fruits are gathered and harvest is concluded. In November the days are still often agreeable, but the nights are usually cold, and in the latter part of the month there are violent storms of snow and rain. December is a winter month, in it the temperature falls to about 26°, the inland waters freeze, and there are usually heavy snow storms. The mean temperature of this quarter is about 35°

The local varieties of climate—are considerable. In the south-western parts of the Province, the climate is more equable and mild than in the eastern counties; but in winter there is more wet weather and in summer the coast is often enveloped in fog. In the eastern parts of the Province the winters are more steady and

dry, and fog scarcely ever appears; but the accumulation of ice, during winter, in the Gulf of St. Lawrence, causes the spring to be colder and more tardy in its approach.

The agricultural productions of Nova Scotia—are similar to those of the middle and northern parts of Europe. The staple crops are wheat, oats, barley, the potatoe and turnip. Apples, pears, cherries, plums, all the small garden fruits, and the ordinary garden vegetables, are produced abundantly. Early varieties of Indian corn ripen. The peach, grape and melon do not ripen in the open air, except in the finest exposures and seasons.

II.—GEOLOGY.

THE NATURAL HISTORY OF ROCK FORMATIONS.

The rock formations of NovaScotia—belong to four geological systems, which are, in ascending order, or proceeding from the older to the newer.

1st. The Primary or older Metamorphic system.
2nd. The Silurian system.
3rd. The Carboniferous system.
4th. The new red sandstone system.

The *Primary System*—consists, in Nova Scotia, principally of granite, quartz rock, clay slate, and mica slate.

Granite—is a crystalline mixture of three minerals, quartz, felspar and mica. It usually occurs in irregular masses and thick veins, and is one of the earliest known products of the volcanic or igneous forces of the earth. In the granite of Nova Scotia, the quartz is usally col-

ourless, the felspar white or reddish, and the mica in dark coloured shining scales.

Quartz rock—is silica or flint, usually of a granular texture, and often intermixed with foreign substances. It generally occurs in beds or thick layers, and is probably sandstone hardened and altered by subterranean heat. The quartz rock of Nova Scotia is usually of a rather dark grey colour. It is sometimes improperly called whinstone.

Clay Slate—is distinguished by its fine texture, and lamination or property of splitting into thin plates. Some of the varieties found in Nova Scotia are fine grained with glistening surfaces; others are coarse and hard. The prevailing colour is a dark slate. This rock often contains iron pyrites or sulphuret of iron, which becoming decomposed, when exposed to the weather, gives it a rusty appearance. In consequence of this, some varieties of slate are locally known by the name of "ironstone."

Mica slate—is a mixture of mica and quartz, divisible like common slate into laminae or plates. It abounds in the northern part of Cape Breton and the east of Nova Scotia.

The primary system—occupies the counties of Yarmouth, Shelburne, Queen's, Lunenburg and Halifax, the southern half of Guysborough, and the south of Digby, Annapolis and King's. It also occupies the northern part of Cape Breton.

Useful minerals—have not yet been found in this system; it has, however, as yet been little explored. The granite which abounds in it, is often of excellent quality for building and for mill-stones, but has not yet been worked to any great extent.

The soils of the primary system—are the poor-

est in the province; being generally stony and seldom productive. They may in general be greatly improved by the use of lime.

The *Silurian System*—is the oldest fossiliferous system of geologists. In Nova Scotia it consists principally of slates, shales, grits and thin bedded coarse limestones, sometimes filled with fossil shells. In many parts of the Province, the rocks of this system are very much altered by heat, being converted into quartz and slate much resembling those of the older metamorphic system; and associated with syenite, greenstone, porphyry and other igneous rocks.

The slates of this system in Nova Scotia—are often as perfect in their slaty structure as those of the primary system, but differ from them in containing fossils, and in presenting a greater variety of colours.

Its shales, grits and limestones—are mixtures in various proportions, of clay, sand and carbonate of lime. They are usually hard, thin-bedded and dark coloured.

Syenite—is a crystalline igneous rock, nearly related to granite, but containing hornblende instead of mica. The syenite found in Nova Scotia usually has colourless quartz, reddish or grayish felspar, and black hornblende; the felspar is the predominant ingredient, and gives its colour to the rock.

Greenstone and porphyry—are igneous rocks, generally less perfectly crystalline than syenite. The first is a mixture of felspar, usually white, and hornblende usually black or greenish. The second consists of a base of hornblende rock or compact felspar, with crystals of lighter coloured felspar dispersed through it.

The fossils of the Silurian system in Nova

Scotia—are marine shells, crustacea and corals, all of species now extinct.

In Nova Scotia proper—the silurian system and its igneous rocks occupy two elongated belts, one extending along the Cobequid chain of hills, the other extending through the centre of Digby, Annapolis and King's, the south of Hants, Colchester and Pictou, and the highlands of Sydney and Guysborough. These two belts include all the higher hills of the Province.

In Cape Breton—the silurian system occupies a small space in the southern part of Cape Breton county, but its general limits are not yet well ascertained.

The useful minerals of this system—are iron ore, which occurs in large quantity and chiefly in the form of peroxide, at Nictaux and Clements, at Folly mountain in Londonderry, and at the East river of Pictou; limestone, which does not however abound in this system; and roofing slate.

The surface—where the rocks of this system prevail, is generally hilly and often stony, but affords soils which are always much superior to those of the primary districts, aud are often very fertile.

The *Carboniferous System*—is newer than the silurian, and in most parts of Nova Scotia rests immediately upon it. The rocks composing this system, in Nova Scotia, are red and grey sandstones, shales, conglomerates, gypsum, limestone and coal. All of these are stratified or bedded, and alternate with each other.

Conglomerate—consists of gravel or rounded fragments of stone, cemented together, and forming a rock often of considerable hardness.

Sandstone—is silicious sand cemented into

stone. It varies much in colour and hardness. In Nova Scotia its usual colours are red, buff and grey; and some varieties are so soft as to crumble in the fingers, others nearly as hard as quartz rock. The coarser and pebbly varieties approach the conglomerates in their texture, and the finer, composed of fine sand intermixed with clay, pass into shales.

The shale of the coal formation—consists of clay of various degrees of hardness, and often divisible into thin layers. Its prevailing colours are reddish, brown, grey and black.

Gypsum—is the sulphate of lime. Two species are found in Nova Scotia, common gypsum or "plaster" which contains about 21 per cent of water, and is so soft that it can be scratched by the nail; and anhydrous gypsum or "hard plaster," which contains no water and is much harder than the common variety. Both varieties of gypsum abound in the carboniferous system of Nova Scotia, forming in some places very thick beds.

Limestone—is the carbonate of lime. Numerous beds of this rock, varying much in colour and quality, occur in the carboniferous system of Nova Scotia.

The coal of Nova Scotia—is of the bituminous and caking variety. The beds hitherto discovered are not numerous, but some of them are very large and valuable, and are extensively worked.

The aggregate thickness of the carboniferous system in Nova Scotia—is very great; and it may be usefully divided into three subordinate groups, named respectively, the older, middle and newer.

In the older carboniferous series*—the prevailing rocks are reddish sandstones, shales, conglomerates and marls, including beds of grey and dark shale, limestone and gypsum. This series includes all the most important beds of limestone and gypsum; and in some places its fissures contain valuable deposits of brown hematite, a variety of iron ore, and sulphate of Barytes, a substance used in the manufacture of paints.

The middle carboniferous series—includes the coal measures, properly so called, which contain productive beds of coal. The prevailing rocks in this group are grey and dark coloured sandstones and shales, with a few reddish beds. It includes all the valuable beds of coal in the Province, and also layers of clay-ironstone and beds of freestone and grindstone.

In the newer carboniferous series—reddish sandstones, shales and conglomerates again prevail, though there are numerous grey beds. This series contains a few beds of coal, limestone and gypsum; but they are generally of little importance. It affords however valuable beds of freestone and grindstone.

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* The older carboniferous series was formerly supposed to belong to the new red sandstone system. This error arose from the circumstance that its general appearance and mineral character greatly resemble those of the new red sandstone groups of other countries. Those readers who wish more full information on this and other subjects noticed in the article on geology, are referred to Mr. Lyell's Travels in North America, and to various papers in the proceedings and journal of the Geological Society of London, by Mr. Lyell, Mr. Logan, Mr. Brown, of Sydney, and Mr. Dawson, of Pictou.

The fossils of the carboniferous system—are numerous and highly interesting. The limestones of its older part contain great quantities of shells, corals and scales and teeth of fish, often in a very perfect condition, as well as a few fossil plants; its middle and newer parts, beside large quantities of vegetable matter in the form of coal, include a vast variety of leaves and trunks of plants, having their forms and sometimes their internal structure very perfectly preserved. All the fossil remains of the carboniferous system are of species now extinct.

The carboniferous system occupies—a small part of the east of King's County; the north and middle of Hants; the greater part of the lowlands of Colchester; the lowlands of Cumberland, Pictou and Sydney, and part of Guysborough. In Cape Breton it occupies much of the eastern part of Cape Breton county, the greater part of Richmond and the south of Inverness.

The localities of valuable beds of coal—are the northern part of Cumberland, especially the Joggins and Spring hill; the East River of Pictou, where the thickest bed yet discovered in the Province occurs; the eastern part of Cape Breton County, especially at North Sydney; the northern part of Colchester, where some small beds have been discovered; and probably the south of Inverness county in Cape Breton.

The localities of the Iron ores of the carboniferous system—are the mouth of the Shubenacadie and the East river of Pictou, where veins of hematite occur in the older carboniferous system; and the coal measures of Cumberland, Colchester, Pictou and Cape Breton, which contain beds of clay ironstone.

The principal localities of beds of gypsum—

are, nearly all the north and middle of Hants, various places in the south and middle of Colchester, the northern part of Cumberland and Wallace in its eastern part, the East river of Pictou, the neighbourhood of Antigonish in Sydney county; various parts of the northern shore of Bras D'Or lake in Cape Breton; and Plaster Cove in the Gut of Canseau.

Useful beds of limestone—occur in all the localities of gypsum above mentioned, and in many other parts of the carboniferous districts.

The surface of the carboniferous system—is undulating, and sometimes rises into elevations of 500 feet in height. Its soils vary from sandy loams to stiff clays, but are almost universally capable of cultivation, and include the most valuable uplands in the Province.

The *New Red Sandstone*—is a much later deposit than the carboniferous system, and probably corresponds with the *Triassic* system or upper new red sandstone of Europe. In Nova Scotia it consists entirely of red sandstone and red conglomerate, and is associated with great masses of trap.

Trap—is a dark coloured rock whose principal constituent mineral is augite. It is similar in composition and appearance to the lava of modern volcanoes, and has like it been ejected in a melted state, from the interior of the earth. In Nova Scotia extensive eruptions of this rock have occurred during the period of the deposition of the new red sandstone.

The new red sandstone occupies—the isthmus connecting Digby Neck with the main land, and the long valley extending from Annapolis to Minas Basin; it skirts the shores of Cobequid Bay, from the mouth of the Shubenacadie to

Truro; and extends along the north side of the Bay, in a narrow though continuous belt, from Truro to Moose river, and beyond that river in isolated patches, as far as Cape D'Or.

The Trap associated with the new red sandstone—forms the ridge extending from Cape Blomidon to Briar Island; and on the opposite side of Minas Channel and Basin, several isolated patches between the Five Islands and Cape Chiegnecto, the Five Islands themselves, Two Islands, Partridge Island, Spencer's Island and Isle Haut. In most of these localities, the trap rests on the new red sandstone.

Neither useful minerals nor fossils—have yet been found in the sandstone of this system. The trap connected with it affords abundance of agates, jaspers and other forms of quartz, which might be used for ornamental purposes.

The soils of the new red sandstone—are light and sometimes gravelly, but in general fertile. Those of the trap are rich, though the surface of the hills of this rock is often too precipitous to admit of their easy cultivation.

In addition to the formations above described—there are superficial deposits of two kinds; drift or boulder clay, and river and marine alluvium.

The *Drift*—is spread over a large part of the surface of the Province. It consists of clay with stones and boulders, or of beds and mounds of gravel. This deposit marks the last change which the surface has undergone by the agency of water.

The *Alluvium*—consists of fine mud deposited by the tides and rivers, and whose deposition is in many places still proceeding. Of this nature are the large and valuable tracts of dyked marsh, and the intervales on the the margins of most of the rivers of the Province.

III—ZOOLOGY

THE NATURAL HISTORY OF ANIMALS.

THE VERTEBRATED ANIMALS—

Forming the first great divison of the animal kingdom; are distinguished by possessing an internal bony skeleton. They may be arranged in Four Classes. 1st. Mammals, or those which bring forth their young alive and suckle them with milk. 2ndly. Birds. 3rdly. Reptiles. 4thly. Fishes.

CLASS 1ST.—MAMMALS.

The animals of this class indigenous to Nova Scotia—belong to the following *Orders:*

1st. *Carnivora* or flesh eating animals.
2nd. *Rodentia* or gnawing animals
3rd. *Ruminantia* or ruminating animals.
4th. *Cetacea*, the whale tribe.

Order I.—Carnivora.

1. The BAT, (*Vespertilio.*)—The Bats are distinguished by the broad membrane stretched ever their legs and the lengthened fingers of their fore feet, and which enables them to fly. They prey on insects, which they take on the wing; they are active only in the summer evenings, spending the day in hollow trees and similar places of concealment, and passing the winter in a state of torpidity. A small species is not uncommon in Nova Scotia.

2. The STAR-NOSED MOLE, (*Condylura Longicaudata,*)—is a burrowing animal, spending the greater part of its life underground, and feeding on worms and grubs; a mode of life for which its broad shovel-like fore feet, its firm and

thick fur, its small and deeply sunken eyes, and the delicate feelers surrounding the point of its nose, admirably fit it. It spends the winter in a state of torpidity.

3. The Shrew Mice, (*Sorex*).—There are two species of Shrew Mice in Nova Scotia, both very small animals, one of them being the smallest quadruped in the Province. They are nocturnal animals, and prey on insects.

4. The Bear, (*Ursus Americanus*).—This is the largest carnivorous quadruped in the Province. It frequently destroys sheep, but is not dangerous to man, unless when attacked by him. In summer it subsists in part on berries and other vegetable substances. In the depth of winter it becomes torpid. The bear in Nova Scotia sometimes attains the weight of 400 pounds; its flesh is valued for food.

5. The Raccoon, (*Procyon Lotor*).—This animal much resembles the Bear in its structure and habits, but is much smaller, being usually about three feet in length. It subsists in part on the flesh of smaller animals and in part on nuts and fruits. It becomes torpid in winter. It is a nocturnal animal, and during the day conceals itself in hollow trees and similar places. Its fur is used by hatters.

6. The Wolverene or Glutton, (*Gulo Luscus*).—This is a rare animal in Nova Scotia. It is sly, cunning and voracious, but its strength and ferocity have been much exaggerated. It feeds exclusively on the flesh of animals.

7. The Weasel Family, or (*Mustelidae*).—Of this family 7 species are found in Nova Scotia, viz: the Ermine, (*Mustela Erminea*); the Weasel, (*M. Communis*); the Martin, (*M. Martes*);

the Fisher, (*M. Canadensis*); the Skunk, (*Mephitis Americana*); the Mink, (*Mustela Vison*); the Otter, (*Lutra Canadensis*). All these species are very active and voracious, and destroy great numbers of the smaller animals. The two last named frequent the water and prey on fish. The furs of all the species are useful; those of the Martin (called Sable in Europe) and of the Otter are most valuable. The Ermine is brown in summer and becomes white in winter.

8. The LYNX or WILD CAT, and the LOUP CERVIER or LUCIFEE, (*Felis Canadensis*, *Felis* ———). The Lynx, like other animals of the Cat family, is exclusively carnivorous, and secures its prey by springing upon it. It subsists on hares, partridges and other smaller animals. There appear to be two species in Nova Scotia, known respectively as the Wild Cat and Lucifee. The skins of both are used as furs.

9. The WOLF, (*Canis Lupus Americanus*); is rare in Nova Scotia, and was not known to exist in the Province till 1845, when a few individuals made their appearance, and were supposed to have migrated from New Brunswick. Their numbers appear to have increased since 1845, and in some settlements they have destroyed considerable numbers of sheep. The shyness and cunning of the Wolf and its nocturnal habits, render its capture very difficult.

10. The FOX, (*Canis Fulvus*); is rather abundant in Nova Scotia, and subsists on small quadrupeds and birds, occasionally destroying domestic fowls. The cross Fox, (*Canis Decussatus*), and the black or silver grey Fox, (*C. Argentatus*) are varieties of the same species, but are comparatively rare. The fur of the Fox is valuable

but that of the red is much less so than that of the cross or black.

11. The SEALS, (*Phocidae*). Several species of Seals are found on the coast of Nova Scotia, and are pursued for the sake of their skins and blubber. They are all carnivorous, feeding on fish, and spend the greater part of their lives in the water, though at some seasons they are fond of reposing on the shore or on ice. The Sea Cow or Morse, (*Trichecus Rosmarus*), which belongs to this family, cannot now be included among the animals of Nova Scotia, but is said formerly to have been found on Sable Island.

Order 2.—Rodentia.

1. The HARE, (*Lepus Americanus*); is usually named in Nova Scotia the "Rabbit." They are very numerous, especially in young woods of the second growth, and great numbers are taken by wire snares in winter. The colour of the hare changes in winter from brown to white. Its flesh is palatable and its fur is used by hatters, though it is of little value.

2. The MARMOT or WOOD CHUCK, (*Arctomys*). This is a burrowing animal, rather smaller than the Hare, and of a dull brown colour. It subsists on roots and leaves, and becomes torpid in winter. Its flesh is eaten by the Indians.

4. The PORCUPINE, (*Hystrix Dorsata*); is remarkable for the strong and sharp spines intermixed with its hair, and which serve as a defence against the attacks of dogs and other carnivorous animals. It feeds on bark, buds and nuts, and prefers rocky and secluded localities. Its flesh is eaten by the Indians, and the spines or

quills, after being dyed with gay colonrs, are used for ornamenting baskets and other articles of Indian manufacture.

5. The SQUIRRELS. Of these three species are common in Nova Scotia; the ground Squirrel, (*Sicurus Listeri*). The common or "English" squirrel, (*Sicurus Hudsonicus*). The flying Squirrel, (*Pteromys Sabrinus*). All these species feed principally on nuts and seeds, and make their nests or burrows in the roots or hollow parts of trees. The flying Squirrel is nocturnal in its habits, and remarkable for the expanded skin of its sides, which forms a broad surface supporting the animal in the air, and enabling it to make extraordinary leaps.

6. The BEAVER, (*Castor Fiber Americanus*), is a social or gregarious animal, and inhabits the margins of brooks and ponds, where it subsists on aquatic plants and the bark of young trees. Families of Beavers unite in making artificial ponds in the course of lakes and streams, by constructing embankments of wood and mud; and in these ponds, they build neat and strong winter habitations of the same materials. Their remarkably strong and large incisor teeth enable them, in the execution of these works to cut down trees of twelve inches in diameter. The value of the Beaver's fur, which is used by hatters, and its stationary mode of life, have caused it to be extirpated from all the settled parts of the Province, and it is now rare even in the most secluded localities.

7, The MUSK RAT or MUSQUASH, (*Fiber Zibethicus*), much resembles the Beaver, but is considerably smaller. It inhabits the banks of rivers and lakes, and constructs a house of mud

for its winter habitation. Its food is roots and other vegetable substances, and occasionally shell-fish. Its flesh is eaten by the Indians, and its fur is used by hatters, though it is less valuable than that of the beaver.

8. The Burrowing Field Mouse, (*Arvicola Pennsylvanica*). This animal, which is much larger than the domestic Mouse, and more clumsy in its shape, is very abundant in the woods as well as the fields; it excavates burrows in which it constructs a warm nest of hay. In winter it burrows under the snow, and subsists on the roots of grass.

9. The Leaping Field Mouse, (*Meriones Labradoricus*), is more rare than the last species. It is a pretty little creature of a light brown colour above and whitish beneath, and has a long tail and strong hind limbs, which enable it to leap with great agility.

Order 3.—*Ruminantia.*

1. The Moose or Elk, (*Alces Americana*). This is the largest quadruped indigenous to Nova Scotia. It is a majestic animal, though of rather clumsy form. Its principal food is the leaves and twigs of trees; its flesh when in good condition is excellent. Moose are still numerous in some parts of Nova Scotia, and in winter, when the snow is deep and they are unable to advance rapidly, they are pursued by men on snow shoes, and killed.

2. The Caribou or Rein Deer, (*Cervus Tarandus*); is much smaller than the Moose, but is of more elegant shape, and greater swiftness, and its flesh is of superior quality. It is probably identical with the Rein Deer of Lapland, and

might like it be domesticated and rendered useful to man. It is now rare in Nova Scotia.

Order 4.—*Cetacea.*

The Cetacea or Whale Tribe, though they somewhat resemble fishes in their external form, are true mammalia, breathing by means of lungs and suckling their young in the same manner with land quadrupeds. The species most frequently found on the coast of Nova Scotia, are the Whalebone or true Whale, (*Balaena Mysticetus*); the Grampus, (*Phocaena Orca*); Porpoise, (*Phocaena Communis*); the Sea Porpoise, (*Delphinus Delphis*).

CLASS II.—BIRDS.

NOTE.—The birds of Nova Scotia are too numerous to admit of an account of each species in a work of this nature. I shall therefore merely notice the different families in which they may be naturally grouped, and give examples of each.

Birds may be divided into Six Orders, viz:

1st. *Raptores*, or birds of prey.
2nd. *Insessores*, perching birds.
3rd. *Scansores*, climbing birds.
4th. *Rasores*, scraping birds.
5th. *Grallatores*, wading birds.
6th. *Natatores*, swimming birds.

Order 1.—*Raptores.*

1. The FALCONS, (*Falconidae*). This family includes all the diurnal birds of prey, or those which fly and feed by day. The Bald Eagle, the

Fish Hawk, Hen Hawk and Sparrow Hawk are examples of this family.

The Owls, (*Strigidae*), comprise the nocturnal birds of prey, or those adapted for hunting in the evening or by night. All the species found in Nova Scotia are known by the name Owl, as the common Grey Owl, White Owl, Horned Owl, &c.

Order 2.—Insessores.

1. The Shrikes, (*Laniadae*), much resemble the Hawks in their habits, but are smaller and less powerful. They prey on small birds and insects. Only one species, the American Shrike or Butcher bird, is found in Nova Scotia.

2. The Thrushes, (*Merulidae*), feed on insects, especially grubs, caterpillars and worms, and are also fond of fruit. As destroyers of injurious insects they are of incalculable service to the farmer, and the song of many of them is pleasing. The common Robin, the Cat Bird, the Wood Thrush, and the Blackbird belong to this family.

3. The Warblers, (*Sylviadae*), are all small birds, whose food consists of insects, which they hunt with great activity among the branches of trees and bushes. They are often brightly coloured and many of them sing agreeably; they are very useful in ridding gardens and orchards of insects. The Wrens and Titmice, the garden Yellow Birds, the Black Cap and a number of other species of our small birds, belong to this family.

4. The Fly Catchers, (*Muscicapidae*), like the Warblers, are small insectivorous birds; the Flycatchers however feed on winged insects

which they take in the air. Among the most common species found in Nova Scotia, are the King Bird, Redstart, and Wood Pewee.

5. The CHATTERERS, (*Ampelidae*). These are larger birds than the Warblers, and feed on fruits and insects. Only one species is found in Nova Scotia, the Cherry-bird, Cedar-bird or Wax-wing. It is well known as a devourer of cherries and of the blossoms of fruit trees.

6. FINCHES, (*Fringillidae*), are readily known by their short and conical bill; they subsist chiefly on grain and seeds; and are numerous and common in every country. Among the numerous species found in Nova Scotia, are the Song Sparrow, Savannah Finch, Snow Bird, Red Linnet and Pine Grosbeak.

7. The CROSSBILLS, (*Loxiadae*). The species of this family found in Nova Scotia, are the American and White-winged Crossbills, which are both small birds, and much resemble each other in appearance. They are remarkable for the singular structure of their bills, whose curved mandibles cross each other at their points. This form of bill enables these birds to extract the seeds of spruce and pine cones on which they feed.

8. The CROWS, (*Corvidae*), are active, shy and wary birds, and are nearly omnivorous, feeding on nearly all kinds of edible substances. The Raven, Crow, Blue Jay and Canada Jay belong to this family. They are all highly useful as destroyers of carrion and of noxious insects.

6. The CREEPERS, (*Certhiadae*), are small insectivorous birds, and obtain their food in the crevices of the bark of trees, along the trunks and branches of which they climb in the manner of

woodpeckers, using their bills to remove portions of the bark which conceals their prey. Two species, common in the woods of Nova Scotia, are the white-bellied Nuthatch and the Brown Creeper.

10. The Humming Birds, (*Trochilidae*). This family includes the smallest of birds; one species only, the Ruby-throated Humming Bird, is found in Nova Scotia. It subsists on minute insects, which it extracts by means of its long slender bill and tongue, from the interior of flowers. The humming sound produced by these birds, is caused by the rapid motion of their wings.

11. The Kingfishers, (*Halcyonidae*,) are remarkable for the great length of their bill, and the shortness of their feet. Only one species, the belted Kingfisher, is found in Nova Scotia. It frequents the shores of harbours and streams, and preys on small fish, in pursuit of which it dives into the water.

12. The Swallows, (*Hirundinidae*), are remarkable for the great length of their wings and the rapidity of their flight. They pursue and capture insects on the wing. The Republican, Barn, Chimney, Bank and Blue Swallows, are found in Nova Scotia.

13. The Night Hawks, (*Caprimulgidae*). These resemble the Swallows in their manner of capturing insects on the wing. They are however nocturnal in their habits, coming forth in the evening and returning to rest before morning. The Night Hawk, sometimes called Musquito Hawk, and the Whip-Poor-Will are found in Nova Scotia.

Order 3.—Scansores.

The Woodpeckers, (*Picidae*), subsist on the grubs or larvae found in the wood and bark of decaying trees, and which they extract by means of their strong wedge shaped bill and extensile barbed tongue. The species found in Nova Scotia are the Hairy, Golden-winged, Yellow-bellied, Three-toed, and Red-headed Woodpeckers.

Order 4.—Rasores.

1. The Grouse, (*Tetraonidae*). The species of this family found in Nova Scotia, are the Ruffed Grouse, commonly called the Birch Partridge, which inhabits the hardwood forests and feeds on various seeds, leaves and berries; and the Spotted Grouse, or Spruce Partridge which subsists on the leaves of spruce and fir.

2. The Pigeons, (*Columbidae*). The only species of this family found in Nova Scotia, is the Passenger Pigeon, usually named the Wild Pigeon, which in summer is found in the woods and burned barrens. Its food is grain, seeds and berries.

Order 5.—Grallatores.

1. The Herons, (*Ardeidae*), are the largest and most beautiful of the wading birds found in Nova Scotia. They subsist on fish, which they capture, when wading in ponds and estuaries, by means of their strong and sharp bill. The best known species is the great blue Heron, often called "Crane," which frequents many of the harbours of this Province.

2. The Snipes, (*Scolopacidae*), are character-

ised by their weak and slender bill, with which they bore in the mud in search of worms. This family includes the American Snipe and Woodcock, as well as the various species of Sandpipers and Curlews.

4. The PHALAROPES, (*Phalaropidae*), somewhat resemble in their habits the Sandpipers, but have their toes fringed with a membrane which enables them to swim. The Hyperborean or brown Phalarope is found in Nova Scotia.

4. The PLOVERS, *Charadriadae*), are less aquatic in their habits than most other families of this order, and often frequent fields and pastures, where their food consists principally of worms. The Golden Plover, Ring Plover, and Black-bellied Plover, are among the species occurring in Nova Scotia.

Order 6—*Natatores.*

The DUCKS and GEESE, (*Anatidae*). Of this well-known family numerous species frequent the shores and lakes of Nova Scotia, especially in spring and autumn. Among these are the Wild or Canada Goose, the Brent, the Black duck, Eider duck, Wood duck, Pintail, Teal, Buffel headed duck, Harlequin duck, &c.

2. The DIVERS, (*Colymbidae*), in form resemble the Ducks, but have a straight and strong bill, adapted to capturing fish, and are altogether marine in their habits. The great northern Diver or Loon is the most generally known species.

3. The AUKS, (*Alcidae*). These are marine diving birds, which use their wings as well as their feet for propelling them through the water, and feed exclusively on fish. To this family be-

long the birds named Guillemots, Auks, Puffins, and Sea Doves.

4. The GULLS, (*Laridae*), are long winged birds, flying to great distances, and feeding on all kinds of garbage and on small fish. The Terns or sea Swallows, the various species of Gull, and the Petrel, belong to this family.

5. The GANNETS, (*Pelicanidae*). These are large, voracious and wandering birds, preying on fish and spending the greater part of their lives on the sea. The Gannets and Cormorants are the principal species.

6. The GREBES, (*Podicepidae*), are swimming birds of small size, whose toes are not united by a membrane, but merely broadly fringed by it; they are expert divers and feed on small fry, insects, seeds, &c. Of this family, the red-necked Grebe and the Dobchick or Water-witch are found in Nova Scotia.

CLASS III.—REPTILES.

The Reptiles of Nova Scotia—are not numerous, and neither of large size nor injurious to man. The principal are, a fresh water Tortoise (*Emys*), found in the rivers and streams, a few species of Snakes and some small Lizards. There are also a few species of frogs, toads, and newts, which though usually included in a separate class (the Amphibia), may be mentioned here.

CLASS IV.—FISHES.

The animals of this class—are numerous and very important to man, it will therefore be proper to notice particularly the principal species found in the waters of Nova Scotia.

Division 1st.—Fishes having a bony skeleton.

1. The Bass(*Labrax Lineatus*), is a large and beautiful species of perch, easily distinguished by the broad stripes of white and brown extending along its whole length. It is found in many harbours and estuaries, especially those of the Bay of Fundy. It is a bold and active fish, and readily takes a bait. Its flesh is excellent, and it sometimes attains the weight of 40 or 50 pounds, though usually much smaller,

2. The Mackarel, (*Scomber Scombrus*), is found on all parts of the coast of Nova Scotia, and sometimes appears, at particular points, in immense shoals, whose appearance is not however very regular or certain, as this fish is very irregular in its migrations. Large quantities are annually taken by the fishermen of Nova Scotia. It is probable that other species of mackarel occur on the shores of the Province.

3. The Blue Perch (*Labrus coricus*). This little fish, often called simply the Perch, is found in great abundance in all the harbors and estuaries, usually in the neighbourhood of rocks and wharves. It is often caught by boys, but is almost valueless for food.

4. The Sculpin (*Coltus*), is very common in harbors and estuaries, where its voracity and hideous appearance are sources of great annoyance to juvenile anglers. It is not used for food.

5. The Sucker (*Catastomus*) is a fresh-water fish, distinguished by the peculiar form of its mouth, whose lips project beyond the jaws, forming a semi-cartilaginous ring, by which the animal fastens itself to rocks and stones, a habit which has given origin to its common name. It

is useless to man. There are more than one species.

6. The SALMON (*Salmo Salar*) is found in most of the large rivers of Nova Scotia, and is also taken on the coast in spring before it has entered the rivers, which it does annually, for the purpose of depositing its spawn, returning to the sea after this purpose is accomplished. The salmon is usually taken in nets or speared, and in Nova Scotia considerable quantities are preserved by pickling and smoking.

7. The TROUTS (*Salmo Fontinalis* &c). At least two species are common; the salmon trout, which inhabits harbours and estuaries, and ascends rivers and brooks for the purpose of spawning; and the common trout, found in all the rivers, brooks and lakes, and varying very much in size and colour, according to the nature of its food.

8. The SMELT, (*Osmerus Eperlanus*). This pretty little fish abounds in all the inlets of the coast, and is especially plentiful in spring, autumn, and winter. In harbours which are frozen at the latter season, great numbers are caught through the ice. The flavour of the Smelt is very delicate, and in the seasons when it is abundant, it is much used.

9. The HERRING, (*Clupea Elongata*). This highly useful fish is found abundantly in spring and autumn, on the coast of Nova Scotia. They are taken in seines and nets; and their capture and curing forms a very important branch of industry. The Herring, like most other migratory fishes, prefers shallow water for the deposition of its spawn; and this is the reason of its appearance in large shoals on the coasts at particular seasons; at other periods of the year, it wanders more widely over the ocean.

10. The Alewife or Gaspereaux, (*Clupea Vernalis*). This species is nearly as abundant as the common Herring, which it much resembles. In spring it ascends rivers and streams to their very sources, for the purpose of depositing its spawn, and is then easily caught in great quantities. It is not so much esteemed as the Herring.

11. The Shad, (*Alosa*), is nearly allied to the Herring, but is much larger. It is found most abundantly in the Bay of Fundy and its tributaries, appearing to prefer muddy bottoms and turbid water. It is taken in nets, and in weirs or enclosures made on the shores below high water mark. It is equal to the herring as an article of food.

12. The Cod, (*Morrhua Americana*), is one of the most valuable of fishes. It is found abundantly on all the coasts of the Province, and on the banks in neighbouring parts of the ocean. It is taken by the hook and line, and when dried is an important article of commerce. Considerable quantities of oil are made from the liver of the Cod.

13. The Hake, (*Phycis*), is a species of Cod often caught with the common species, but less esteemed as an article of food.

14. The Haddock, (*Morrhua Aeglifinus*), is a species of Cod of smaller size than the common one, and when fresh and in good season, preferable to it as an article of food; in the dried state however, it is not so much esteemed. The Haddock feeds more exclusively on shell-fish than the common Cod.

15. The Tom Cod or Frost Fish, (*Morrhua Pruinosa*) is also a small species of Cod, and

abounds in harbours and estuaries. It is nocturnal in its habits, and is of little value.

16. The Flounder or Flat-Fish, (*Plattessa*), is common on all sandy and muddy shores, at all seasons. It is easily speared or caught with the hook, but is not generally much esteemed as an article of food.

18. Holibut, (*Hypoglossus Vulgaris*), is the largest of the flat-fishes found on our coasts, sometimes attaining the weight of 500 pounds. It is found on the Atlantic coast of the Province, and is caught with the line. It is much valued for food.

19. The Eel, (*Anguilla*), is found abundantly in the muddy bottoms of harbours and rivers. It is very voracious, feeding on all animal substances living or dead, and frequently eating fish which have been caught in nets. Eels are speared by torchlight, or through holes cut in the ice.

Division 2nd.—Fishes having a cartilaginous skeleton.

1. The Sharks, (*Squalides*). Several species of Shark are occasionally seen on the coast of Nova Scotia, though none are abundant, except the Dog Fish, a small species very destructive to Cod, and often injurious to the nets of fishermen. Among the species occasionally seen on the Atlantic coast, are the White Shark (*Carcharias Vulgaris*). The Blue Shark, (*Carcharias Glaucus*) and the Basking Shark, (*Selache Maximus*). The two first are dangerous to bathers, but are very rare, and may be considered as stragglers from warmer climates.

2. The Skate or Ray, (*Raia Batis*) is common on the coast of Nova Scotia, and is often taken by fishermen, but is not much esteemed.

3. The Sturgeon, (*Accipenser*). A large species of Sturgeon is found in the Bay of Fundy, preferring, like most fishes of this genus, soft and muddy bottoms. In some countries the Sturgeon is much esteemed for food, but in Nova Scotia it is very little used.

THE ARTICULATED ANIMALS—

Constituting the second great division of the animal kingdom, are named articulated on account of their being covered by a jointed case or crust, serving the purposes of a covering to protect the body, and of a skeleton to support the muscles.

This divison includes—the Worms, as the Earth-worm, Leech, &c.; the Crustacea, as the Crab, Lobster, &c.; the Spiders; the Centipedes; and the Insects. Animals of all these classes are found in Nova Scotia and its waters; but the only one to which we need here attend particularly, is the last.

Insects are distinguished from other articulated animals—by their complex organization, their adaptation for breathing in air, the smaller number of their legs and segments, and by their metamorphosis, which consists in a change from the wormlike form in which they at first appear, and which is called the *larva* state, to that of the perfect insect. They are divided into Orders.

Order 1. *Coleoptera.*

Includes those insects which have the upper pair of wings forming a strong horny case for the lower pair, which are thin and membranous.

They are usually named Beetles, and the great Water Beetle, (*Dytiscus*) is the largest of the order found in Nova Scotia. The Fire Flies, (*Elater*); the Turnip Fly, (*Altica*); and the Lady Birds, (*Coccinella*), which are useful in destroying the lice that infest trees; belong to this Order.

Order 2.—Orthoptera.

Or straight-winged insects, are distinguished by possessing two pairs of wings, and jaws fitted for mastication. The Crickets, and the Grasshoppers of which there are several species, all very injurious to vegetation, belong to this Order.

Order 3.—Neuroptera.

Consists of insects which have both pairs of wings membranous and delicately veined or netted, as the name of the order signifying nerve-winged, intimates. The Dragon Flies, (*Libellula*) and the short-lived Day Flies, (*Ephemera*), are the principal genera of this order found in Nova Scotia.

Order 4.—Hymenoptera.

Have four membranous wings, less netted than those of the Neuroptera, and united to each other at their margins, they have also jaws adapted rather for suction than mastication. The Wasps (*Vespidae*); the Bees, (*Apis*); the Humble Bees, (*Bombus*); and the Ichneumons which deposit their eggs on the bodies of caterpillars on which their larvae feed, and thus greatly reduce the numbers of these noxious creatures, belong to this Order.

Order 5.—Homoptera.

Includes a number of curious insects which

subsist by sucking the juices of plants. In Nova Scotia, the most common members of this Order are the Cicadae or Singing Locusts; and the Plant Lice, (*Aphidae*), which often swarm on the leaves of trees and vegetables, and by sucking their sap, greatly weaken and injure them.

Order 6.—*Heteroptera.*

The insects of this Order, like those of the last, subsist by suction; but differ from them in the structure of their upper pair of wings, which are horny and coloured at the base, and membranous at the point. This Order includes the Bug, (*Cirmex*), and the Frog-spittle insects, (*Cercopidae*) which in their young state inhabit the frothy substance often seen on the stalks of grasses and other plants, and which in all their stages, are very injurious to vegetation.

Order 7.—*Lepidoptera.*

Have their wings covered with minute scales often brightly coloured. All the insects of this Order are known by the names of Butterflies, Moths and Millers. In their mature state they are beautiful and harmless insects; but in the larva state they are the greatest pests of farmers and gardeners. All the varieties of Caterpillars, and most of the Grubs, Cut-worms, Apple-worms and Pea-worms, are larvae of Moths and Butterflies.

Order 8.—*Diptera.*

These have only two wings, which are membranous. This Order includes the Mosquitoes and Gnats, (*Culecidae;* the Crane Flies or Harry-long-legs, (*Tipulidae*); the Horse Flies, (*Tabanidae*); the Bot Flies, (*Oestridae*); the Flesh and House Flies, (*Muscidae*); the Wheat

Fly improperly called "Weevil," and the Hessian Fly, (*Cecidomyia*)

The remaining Orders of Insects—include the various species of Fleas and Lice, and the Phryganidae, whose larvae, named caddice worms, inhabit brooks and ponds, where they construct little cases of fragments of wood, sand, &c., which they carry about with them.

THE MOLLUSCOUS ANIMALS—

Form the third division of animals, distinguished by the absence of bony skeleton and external articulated case. The want of these is supplied by a shell or by a tough skin or mantle.

This division includes—the Squids or Cuttle-fish, the marine and fresh water shell-fish, the land snails and slugs, and several other groups of animals found, in Nova Scotia or the neighbouring seas.

The only useful species—are some of the Shell-fish, as the Oyster, (*Ostrea Edulis*); the Mussel, (*Mytilus Edulis*); the Sand Clam, (*Mya Arenaria*); the Razor Fish, (*Solen Ensis*); the Quahog, (*Venus Mercenaria*,); the Scallop, (*Pecten Magellanicus*).

THE RADIATED ANIMALS—

Are distinguished by the arrangement of the members of their bodies, which generally diverge on all sides from a central point. These animals are all aquatic, and many species occur in the waters of Nova Scotia. The Sea-Urchins, Star Fishes and Jelly Fishes are the most common tribes.

IV.—BOTANY.

THE NATURAL HISTORY OF PLANTS.

NOTE.—The wild plants of Nova Scotia being too numerous to admit of even a detailed catalogue, in a work of this description, those Orders only are noticed which contain useful timber trees, fruits, &c.

The Order *Grossulaceae*—includes the Wild Gooseberry, (*Ribes Oxyacanthoides*), a small but agreeable fruit; and two species of Wild Currants, one at least of which deserves cultivation.

The Order *Acerinae*—contains the White Sugar Maple, (*Acer Saccharinum*); the Black Sugar Maple, (*A. Nigrum*); the White or Soft Maple, (*A. Dasycarpum*); the Red Maple (*A. Rubrum*); the Moose Wood or Striped Maple, (*A. Striatum*). The first two species are large and beautiful trees, affording valuable timber and rich saccharine sap, which on evaporation yields maple sugar. The third and fourth species are also large trees, but their wood is less valuable.

The Order *Rosaceae*—Includes the Wild Rose and Sweet Briar, (*Rosa Parviflora* and *Rubiginosa*); the Wild Raspberry, Blackberry and Dewberry, (*Rubus Strigosus, &c.*); the Wild Strawberry (*Fragaria Virginiana*); and other less important flowering and fruit bearing plants.

The Order *Pomaceae*—includes the Medlar or Wild Pear, (*Aronia Ovalis*); a tree which is worthy of cultivation, as its fruit, though small, is agreeable and abundant; the Rowan or Mountain Ash, (*Pyrus Microcarpa*); and the Wild Hawthorn, (*Crataegus*).

The Order *Amygdalae*—contains the Wild Cherry and Choke Cherry, (*Cerasus Pennsylvanica & Serotina*); both fruits of little value.

The Order *Anacardiaceae*—includes the Sumach, (*Rhus Glabra*), a pretty ornamental tree; and the Poison Vine (*Rhus Toxicodendron*).

The Order *Cupuliferae*—contains the White and Red Beech, (*Fagus Sylvatica & Ferruginea*); the White and Black Oak, (*Quercus*); and the Hazel (*Corylus Americana*). The four first species are large and valuable trees.

The Order *Betulacae*—contains the Yellow Birch, Black Birch, White Canoe Birch, and Poplar-leaved Birch, (*Betula Excelsa, Lenta, Papyracea & Populifolia*); and the Alders, (*Alnus Serrulata, &c.*) The two first species of Birch are valuable timber trees. and the Canoe Birch produces the bark used by the Indians for canoes, boxes, &c.

The Order *Ulmaceae*—Includes the Elm, (*Ulmus Americana*), one of the most beautiful trees found in the Province, and very common on the river intervales.

The Order *Salicaceae*—contains the Willows, (*Salix*), of which several small species are native, and some more ornamental species have been introduced; and the Poplars, of which the principal species are the Aspen (*Populus Tremuloides*), the Tree Poplar, (*P. Grandidentata*), and the White leaved Poplar, (*P. Candicans.*)

The Order *Oleaceae*—contains the White Ash, (*Fraxinus Acuminata*), a very useful timber tree; and the Black or swamp Ash, (*F. Sambucifolia*), whose wood is less useful, but in consequence of the facility with which it can be split into strips, is used by the Indians in basket making.

The Order *Coniferae*—includes all the evergreen or softwood trees of Nova Scotia. Many of these are valuable timber trees, as the

White Pine, (*Pinus Strobus*).
Pitch Pine, (*P. Resinosa*).
Hemlock, (*P. Canadensis*)
Black Spruce, (*P. Nigra*)
Red Spruce, (*P. Rubra*).
White Spruce, (*P. Alba*)
Black Larch or Hackmatack, (*P. Pendula*).
Red Larch or Juniper, (*P. Microcarpa*).
Cedar or Arbor Vitae, (*Thuja Occidentalis*).

Other species, as the Fir, (*P. Balsaminea*); the Scrub Pine, (*P. Banksiana*); the Ground Hemlock, *Taxus Canadensis*); and the Ground Juniper, (*Juniperus Communis*), are of smaller size and less value. The Fir however affords the Canada Balsam, and the Ground Juniper bears edible berries.

The Order *Vaccineaceae*—contains a number of Berry-bearing species, the principal of which are, the Red and Grey Cranberries (*Oxycoccus;*) the Blue Berries and Whortle Berries, (*Vaccinium*); the Winter Greens or Tea Berries, (*Gaultheria*).

The Order *Caprifoliaceae*—includes the Cornels, (*Cornus*), some of which, as the Dogwoods, are shrubs, and others, as the Pigeon Berry, herbaceous. This Order also includes the Black and Red berried Elder, (*Sambucus Canadensis* & *Pubescens*); the Wild Snowball or Moose Bush, (*Viburnum Acerifolium*); and the Tree Cranberry (*V. Oxycoccus*), whose berries in appearance and taste resemble the true Cranberries.

APPENDIX.

PRINCIPAL ROADS AND DISTAN CES.

NOVA SCOTIA PROPER.

	Miles.
1. *Halifax to Yarmouth by the South Shore*—	
Halifax to Lunenburg, via Margaret's Bay and Chester,	72
Lunenburg to Liverpool, via La Have River, Petit River and Mill Village,	36
Liverpool to Shelburne, via Port Mouton, Port Joli, Sable River and Jordan R.,	40
Liverpool to Lawrencetown in Annapolis, via Brookfield, Northfield and Nictaux River, 63 miles	
Shelburne to Yarmouth, via Barrington, Argyle and Tusket,	58
Total Halifax to Yarmouth,	206
2. *Halifax to Digby and Yarmouth*—	
Halifax to Windsor,	45
Windsor to Kentville, via Lower Horton and Wolfville,	23
Windsor to Maitland on the Shubenacadie, via Newport, 40 miles.	
Kentville to Annapolis, via Aylesford, Lawrencetown and Bridgetown,	60
Annapolis to Digby,	20
Digby to Yarmouth, via Weymouth and Clare,	67
Total Halifax to Yarmouth,	215

Miles

3. *Halifax to Cumberland*—

Halifax to Truro, ... 65

Truro to Amherst, via Onslow, Londonderry and River Philip, . . . 60

Truro to Tatamagouche, 27 miles. Truro to Parsboro', via Onslow, Londonderry, Economy & Five Islands, 56 miles.

Amherst to Fort Cumberland in N. Brunswick, 7 miles. Amherst to Parrsboro', 34 miles. Amherst to Wallace, 46 miles.

Total Halifax to Amherst, ... 125

4. *Halifax to Pictou, Sydney & Guysborough*—

Halifax to Truro, 65; Truro to Pictou, 40; 105

Pictou to Antigonish, via New Glasgow and Merigomish 52

Pictou to Wallace, via River John and Tatamagouche, 42 miles. Pictou to Amherst, via Wallace, 88 miles. Pictou to Charlottetown, P.E.I., by water, 52 miles

Antigonish to Plaster Cove, C. B., via Pomket, Tracadie and Canseau Ferry, 82 miles. Antigonish to Sherbrooke, via Lochaber, 35 miles.

Antigonish to Guysborough, . . . 34

Total Halifax to Canseau Ferry, 189 miles; to Guysborough, . . . 191

5. Halifax to Guysborough, via Musquodoboit and Glenelg, about 134 miles.

CAPE BRETON.

Plaster Cove to Port Hood, ... 30

Port Hood to Margarie, via Mabou River, 41

Plaster Cove to Arichat, ... 28

Plaster Cove to Sydney, via St. Peters, 78

Sydney to Margarie, via Sydney Mines, Boulardarie Island and Bedeque, . . 65

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Abstract of Meteorological Register kept at the A

(Latitude 45° 34' 30" North; Longitude 6

Barometer 120 feet above the sea.	Highest point
	Lowest point.
	Mean
	Extreme range
Thermometer 6 feet from ground.	Hottest day (14th June, 1842, 98° in shade)
	Coldest day (3 Feb., 1845,--26° on ground at s
	Hottest night [20 feet above
	Coldest night (1 April, 1842, --10°; 13 Jan., -
"	Extreme range [21 Feb'y, 1841, --
"	1st quarter of year mean temperature
"	2nd ditto ditto ditto
"	3rd ditto ditto ditto
"	4th ditto ditto ditto
"	Mean temperature
"	Hot days (70° in June. July, August; 67° in
"	Nights below zero [Sept.; 62° in other mo
"	Nights of frost
"	Degrees of frost (No. of degrees each night below
"	Months with frosty nights
Pluviometer on ground.	Days of snow
	Depth of snow in ft. (17 ins. average 1 in. of w
"	Days of rain
"	Nights of rain
"	Rain and snow in January in inches
"	" February
"	" March
"	" April
"	" May
"	" June
"	" July
"	" August
"	" September
"	" October
"	" November
"	" December
"	Total rain and melted snow (7 months,
	Lightning and thunder observed
	Northern Lights ditto
	Halos round Sun
	Ditto ditto Moon

egister kept at the Albion Mines, By HENRY POOLE, Esq.
North; Longitude 62° 42' West from Greenwich.)

	1843	1844.	1845.	1846.	1847.
	30.485	30.790	30.580	30.620	
	28.870	28.679	28.700	28.530	
	29.770	29.800	29.786	29.773	
	1.615	2.12	1.88	2.09	
342, 98° in shade)	89°	86°	91°	90°	91°
--26° on ground at sunrise	5	—1	2	—2	—5
[20 feet above sea)	69.5	65.5	66.5	69	67
342, --10°; 13 Jan., —17°;	—17	—14	—17	—17	—16
[21 Feb'y, 1841, --24°.)	106	100	108	107	107
emperature	23	21.1	24.39	21.1	18.8
ditto	48.4	48.1	48.7	50.9	48.1
ditto	61.6	60.9	60.98	64.6	63.7
ditto	34.7	34,6	36.8	35.8	
	42	41.21	42.72	43	
July, August; 67° in May,	94	91	98	116	
ept.; 62° in other months)	11	20	11	24	
	173	187	173	168	
grees each night below 32°)	2346	2608	2176	2417	
	10	11	11	10	10
	55	61	65	43	
ns. average 1 in. of water)		9.8¾	6.10¼	8,6¾	
	136	132/45 | 177	133/56 | 189	73/61 | 134	
in inches		5.120	3.932	1,922	3.112
y		2.192	2.840	1.631	1.513
		5.275	1.897	1.838	4.032
		3.907	1.176	988	4,056
		4,479	3.614	1.755	1.776
	1,410	2.906	1.147	3.506	2,465
	1.830	2.071	6.304	3.006	5.308
	3.420	2.433	3.248	4.028	9.462
er	1.080	1,685	3.637	1.166	2.913
	10.580	4,796	2.153	4,192	
er	3.855	4.277	5.960	5.076	
er	2.671	5.376	7.139	5.911	
v (7 months, 1843)	24.846	44,617	43.047	35.029	
erved	7	23	33	14	
itto		16	15	19	
		8	27	13	
		9	15	5