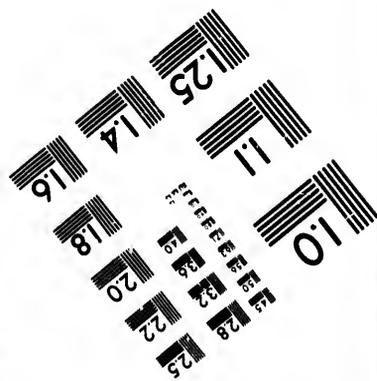
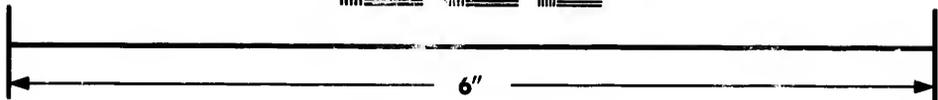
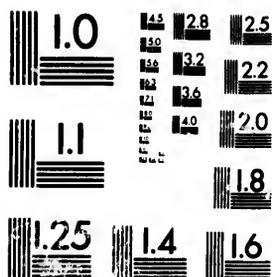


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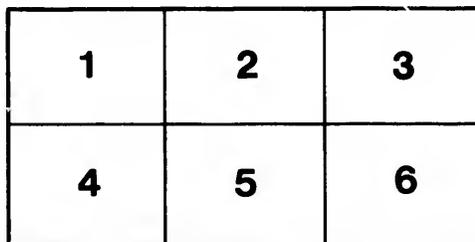
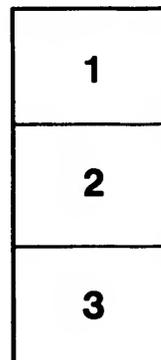
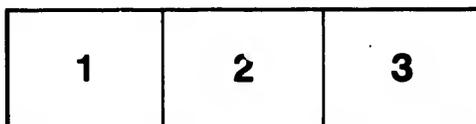
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A
HAND BOOK
OF THE
GEOGRAPHY AND NATURAL HISTORY
OF
THE PROVINCE OF
NOVA SCOTIA.
FOR THE USE OF SCHOOLS AND FAMILIES.

BY J^{hⁿ} W^{illiam} DAWSON. ✓
" "

SECOND EDITION, REVISED AND ENLARGED.

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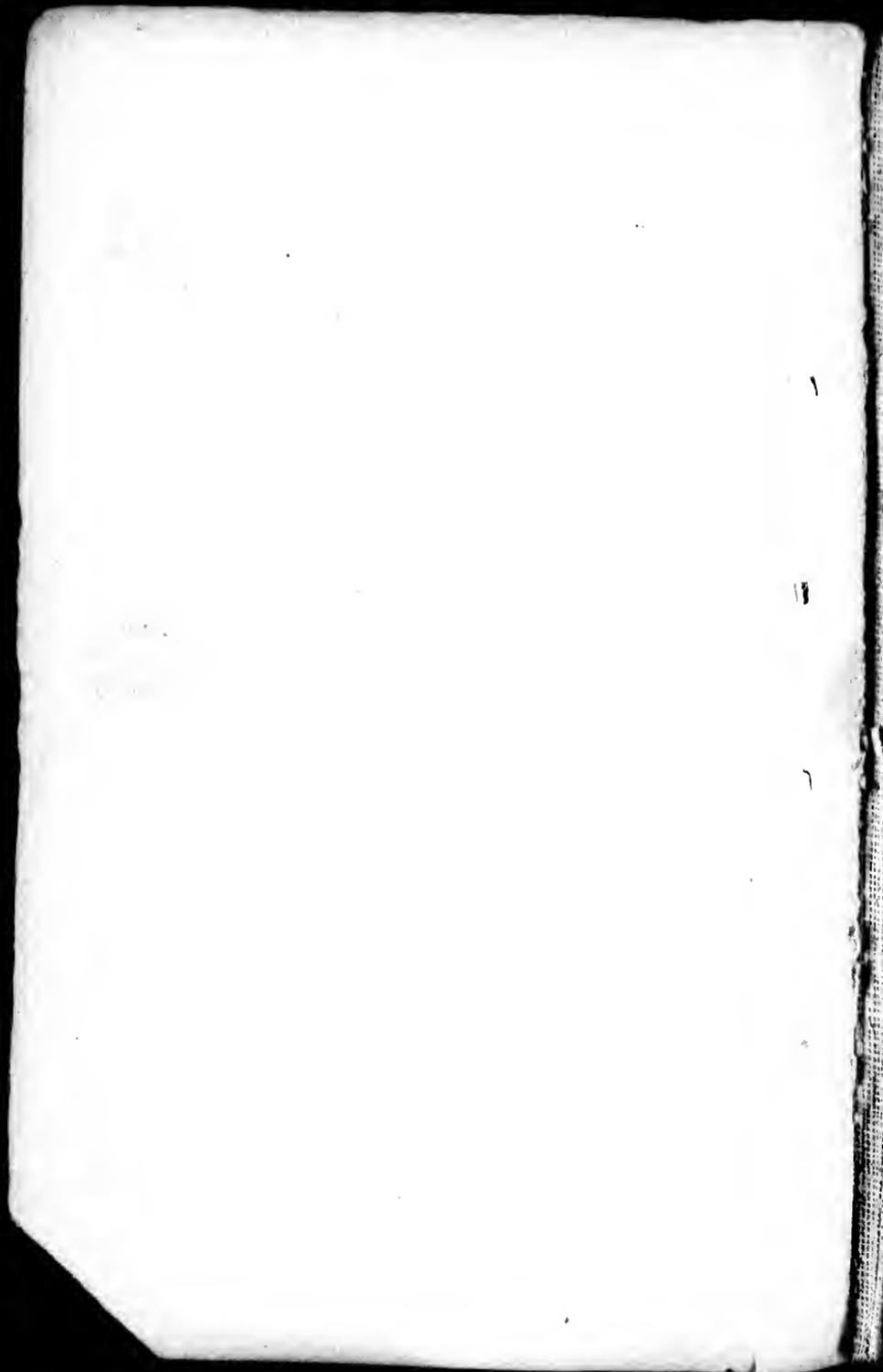
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ERRATUM.

Since the earlier sheets of this work were printed, the northern parts of the Counties of Inverness and Cape Breton, have been erected into the new County of *Victoria*.



PREFACE TO THE SECOND EDITION.

The importance to the young of a knowledge of their own country, the meagre and inaccurate accounts of Nova Scotia contained in the ordinary books of Geography, and the difficulty of obtaining cheap and suitable means of giving instruction in this department, induced the writer in 1847 to compile a cheap School Map of the Province, and in the following year to prepare a Hand Book of the Geography of the country to accompany it. The sale of the latter has now rendered necessary a second edition, which has been carefully revised and somewhat enlarged, and it is hoped gives a tolerably correct view of the natural features and present condition of the Province.

The Section on Natural History, introduced into the first edition with the view of promoting the love and study of nature, and of exciting a well directed spirit of inquiry into the natural resources and productions of our country, has in the present edition been somewhat simplified, and additional explanations have been added. Considerable pains have also been taken to ensure accuracy in the nomenclature and descriptions. The statements of temperature &c., in the article on Climate, are based on the observations of Henry Poole, Esq., of the Albion Mines, Pictou.

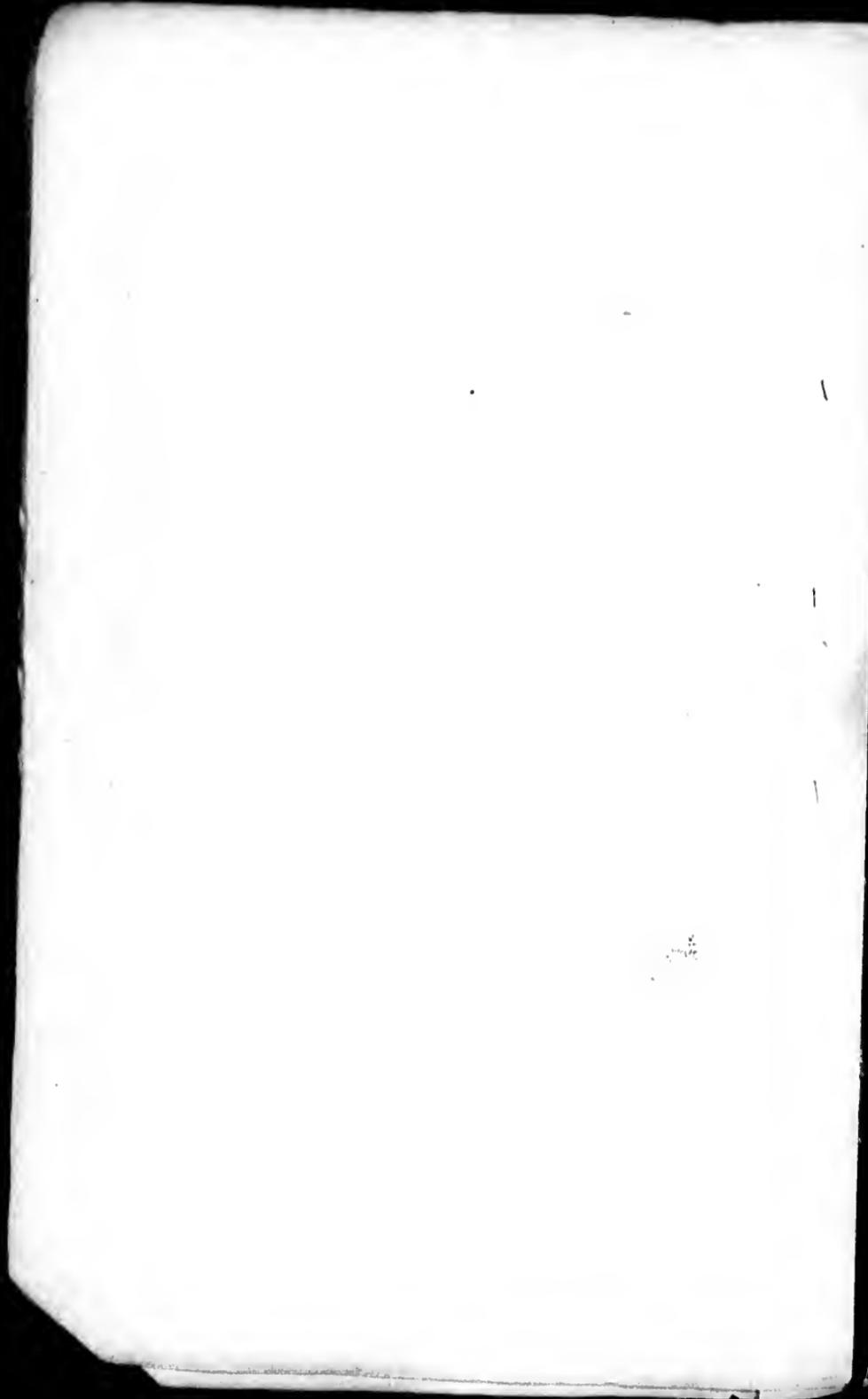
It is necessary to state that the estimates of population given in the former edition, have been retained unchanged. They must now be *far below the truth*. The new census will however soon afford the means of correction.

With the view of rendering the work more useful as a School Book, and of adapting it to improved methods of teaching, some changes have been made in the arrangement, and a few introductory lessons have been prefixed. It is not necessary that the words of the book should be committed to memory by the pupils. When they are acquainted with the names and facts, and more especially with the Map of the Province, and can express their knowledge correctly in their own words, the end is attained. In the Natural History department, it is not intended that the scientific names enclosed in brackets () shall be committed to memory, at least by junior classes. Their principal use is, to enable the teachers and advanced pupils, desirous of further information, to refer with certainty to the descriptions in larger works, and to obtain general views of the arrangement of the objects composing the great kingdoms of nature. Some knowledge of the nomenclature as well as the facts of Natural History, is, however, in the present day, a necessary element in an advanced or liberal education.

Pictou, April, 1851.

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GEOGRAPHY AND NATURAL HISTORY OF NOVA SCOTIA!

Section I.—Geography.

INTRODUCTORY LESSONS.

Lesson I.

[In teaching children the Geography of their Country, with the aid of this manual, the first step should be to ascertain how much geographical knowledge of this kind they already possess. This the Teacher may effect by a series of questions such as the following:]

In what place are we? In what County is it? Of what Province is that County a part? What roads are near? To what places do they lead?—What other places in Nova Scotia do you know? What rivers are near? What places do they flow through or near? Where do they empty? What Bays or Harbours do you know? What mountains or hills? In what direction is _____? (naming places which have been mentioned) At what distance? What do you know of them?

[The Teacher may now refer to the map of the Province, laying it down on the floor or on a table, as nearly as possible in its true position, in reference to the cardinal points, and pointing out, or requiring the scholars to point out the places mentioned, if they are marked on the map, and asking them to estimate the size of the whole province from the known distances between the places which they have visited or heard of.]

Lesson II.

[May take a wider range, and refer to neighbouring and related portions of the world. The children, with a map of the world or of America before them, may be asked the following questions:]

Of what empire is Nova Scotia a province? What other provinces of that empire are near it? With what Continent is Nova Scotia connected? What part of that Continent? On which side of the Continent is it? What ocean lies eastward of it? In about what Latitude does it appear on the map to be? In about what Longitude? (The process of finding these on the map, gives a favourable opportunity for explaining the mode of reckoning latitude and longitude.) In what direction from Nova Scotia is Newfoundland? Labrador? Prince Edward Island? New Brunswick? Canada? The United States? Is the size of Nova Scotia large or small as compared with Newfoundland? Prince Edward Island? New Brunswick? Canada? The United States? America? (The Teacher may here explain that as all Maps are very much smaller than the Countries they represent, so some Maps are on a much smaller scale than others; and will contrast the appearance of the

Province in the Map of Nova Scotia, and in the Map of America or of the world. He may also explain the manner in which portions of the spherical surface of the earth are represented on the flat surfaces of Maps.]

Lesson III.

[May consist of the County in which the school is situated, as given in the book, with the aid of the Map.]

[The pupils may then go regularly through the book, the Teacher in every lesson using the Map, questioning the children, and giving such explanations as he can, where they are required.— The matter may be divided into lessons to suit the convenience of Teacher and class.]

GENERAL DESCRIPTION OF THE PROVINCE.

The Province of Nova Scotia is situated on the eastern side of the continent of North America, between North latitude $43^{\circ} 25'$ and 47° , and between West longitude $59^{\circ} 40'$ and $66^{\circ} 25'$.

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 1713.

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 six miles in breadth.

It is bounded on the north-east by Northumberland Strait, St. George's Bay and the Strait 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 Strait of Canseau is a passage 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 length of Nova Scotia proper is 256 miles; its greatest breadth is 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 most important rivers, are the St. Mary's, the La Have, the Liverpool, the Annapolis, the Shubenacadie, and the East River of Pictou.

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 Annapolis counties. The highest of these is the Cobequid chain, which attains an elevation of about 1100 feet.

Its principal capes and headlands are, Cape St. George, Cape Canseau, Cape Sambro, Cape Sable, Digby Neck, Cape Split and Cape Chiegnecto.

The principal bays and arms of the sea, are Cum-

berland 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 is about 200,000.

Exercise.—Where is Nova Scotia Situated? Its latitude? Its longitude? Of what country is it a province? By whom first colonized? What named by them? When ceded to Great Britain? What are its natural divisions? Find Nova Scotia proper on the Map? Find Cape Breton?

What is the form of Nova Scotia proper? With what connected? By what? Point out the Isthmus? How bounded on the N. E. and E. How on the S. and S. E? How on the N. W? Point out Northumberland Strait? Trace its coast? What countries does it separate? Point out St. George's Bay? To what gulf does it belong? Trace its coasts? Between what coasts does it lie? Point out the Strait of Canseau? Trace its coast? What countries does it separate? What waters does it connect? Point out the Bay of Fundy. Trace its coasts? Of what ocean is it an arm? What countries does it separate? For what is it remarkable? What is Chiegnecto bay? Its branches? Point out Chiegnecto bay? Shepody bay? Cumberland Basin? What is the length of Nova Scotia? Its breadth? Its area? How many acres are in a square mile? What is the character of its surface? What is the meaning of undulating? Are its mountains high or numerous as compared with those of some other countries? Has it many lakes or rivers?

Are they large or small? With what does its coast abound? What is the character of its scenery? Name one of its ranges of hills? Trace it and name the counties through which it passes? Another? Trace it? Another? Trace it? Another? Trace it? Which is the highest of these? What is its elevation? From what is the height of hills measured? (*the level of the sea.*) How much less than a mile are 1100 feet? Name and point out one of its principal bays? Another, &c.? What is the population of Nova Scotia?

[The above is given merely as an example. To append an exercise to every lesson would unnecessarily increase the bulk of the book. The Teacher can easily treat every lesson in a similar manner, allowing the children to answer in their own words, or in those of the book, and explaining any words of a novel or difficult character.]

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 Strait of Canseau, and on the north-east and south-east by the Atlantic ocean.

Its greatest length, is 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 southern and eastern parts it is undulating, with some ranges of low hills. The Eastern coast is very much in-

dented 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, Mire Bay, Gabarus Bay, and St. Peter's Bay, all opening to the Atlantic.

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

CIVIL DIVISIONS OF NOVA SCOTIA.

The principal civil divisions of Nova Scotia, are Counties and Townships.

Counties are the most important of these divisions. Each county sends representatives to the House of Assembly, has a Sheriff and a bench of Magistrates, has two Sessions of the Supreme Court in each year, and has the power of levying Taxes within its limits.

There are seventeen Counties ; fourteen of which are in Nova Scotia proper and three in Cape Breton. Their names are :

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

Townships are subdivisions of Counties. Most of them were originally tracts of land granted to companies or Associations for the purpose of settlement.

Townships can Assess themselves for the support of the poor ; some of them have the privilege of sending Members to the Assembly.

[The Teacher should require the pupils to point out the Counties on the map and trace their forms.]

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 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, but stony; on the isthmus between St. Mary's Bay and Annapolis Basin, usually reddish 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.

The first settlers of Digby were Loyalists 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 1838 was 9269. It is now probably 12,000.

The coast of the Township of Clare is low. The French Settlements form an almost continuous belt along the shore; and the small vessels by which they trade with the United States, are sheltered by piers erected at several points along the coast, which is destitute of good harbours. Near the Sissiboo River, the country is very agreeably diversified; and in this part of the coast, St. Mary's Bay and the opposite high land of Digby Neck, present a fine appearance. The Town of Digby is prettily situated on a steep slope facing the East; and the high cliffs on either side of Annapolis Gut, the shore of Granville, the expanse of Annapolis Basin and the uneven grounds of the Joggins and Bear River, afford

many fine views from the Town and its vicinity. The Town of Digby exports smoked herring, cordwood, fruit and farm produce, and carries on much trade with St. John, to which place Steamers ply regularly. Annapolis Gut, the only outlet of the Basin of the same name, is a very picturesque Strait; the trappean cliffs on either side rising to a great height. The tides of the Bay of Fundy rush through it very rapidly.

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 Harbours are Yarmouth, Jebogue, Tusket, and Pubnico.

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 main 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 by its numerous lakes, streams and inlets. 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 chiefly employed 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.

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 settlements are on the coast of the Township of Argyle.

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 1838, 9189. It is now 12000.

The Town of Yarmouth forms one continuous street, extending almost two miles along the East side of the harbour. Its northern extremity, at one time a separate village, is named Milton. Yarmouth is the most important town in the western part of Nova Scotia, and contests with Pictou the honour of being the second town in the Province.—Ship-building and the carrying trade are the princi-

pal foundations of its prosperity. There are several good agricultural settlements in this County, and the soil is generally cultivable; but the comparatively large trading and sea-faring population causes the price of provisions to be high. Tusket is a thriving little village on the East side of the river of the same name; which has in some parts of its course much pretty and picturesque scenery.

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, Cape Negro Island, McNut's Island, and Locke'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, there are tracts of fertile soil producing valuable timber.

The principal Towns and Settlements are Shel-

burne, the county town, at the head of Shelburne harbour; Barrington on the harbour of the same name; Locke's Island in Ragged Island harbour; 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, and oak timber and plank are exported.

The Townships of this County are Barrington and Shelburne.

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 1838 was 6831. It is now probably about 9000.

The Town of Shelburne possesses a very fine Harbour, and has an agreeable appearance: but its growth is by no means rapid. The settlement on Locke's Island is a thriving little village, whose inhabitants are actively engaged in the Herring and Cod fishery. The finest agricultural district appears to be that of Clyde River, where the soil is less stony than in most other parts of the County, and there are also very large tracts of bog which when drained will form valuable soils. At Barrington the land is exceedingly rocky, and the settlements are scattered along the shores of the harbour and of Cape Sable Island; and do not form a town or village.

The people of Barrington are active and skilful fishermen and navigators. The County of Shelburne possesses large quantities of fine and valuable granite, which is not however, as yet extensively quarried.

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 in the vicinity of the coast is very rocky and unproductive; but in the interior of the County there are tracts of good soil, and 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; Milton on the Liverpool River; 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 Settlers were emigrants from Massachusetts, who founded the town of Liverpool in 1760.

The population in 1838 was 5798. It is now probably about 7000.

The town of Liverpool is built on a very rocky site, on the West side of the entrance of the Liverpool river. It consists principally of one long street, which in the central part of the town, is agreeably ornamented with shrubs and trees planted in front of the houses. This street has but little of a business aspect, the trade of the place being principally carried on at the wharves. In the rear of Liverpool, a large building has been erected for a Seminary in connection with the Independant Church. Large quantities of fish are seined on the shore of this County ; and timber is brought from great distances inland, to be sawed at the mills in Liverpool and Port Medway rivers.

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 River is the Annapolis, a large

stream running nearly parallel to the northern shore of the county, and receiving the waters of several considerable tributaries from the South.

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 very rocky; but includes much fertile soil.

The most valuable mineral found in this County is iron ore, 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 working of the ore at Nictaux has recently been recommenced.

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

The principal towns, are Annapolis, the county town, which was at one time the capital of the Province, and is the oldest settlement in Nova Scotia;

Bridgetown, at the head of the navigation on Annapolis River, and the principal seat of trade; and Laurencetown.

The townships of Annapolis are Annapolis, Granville, Clements, and Wilmot.

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 Massachusetts, 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 which 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 1838 was 11989. It is now about 14000.

The town of Annapolis is pleasantly situated on a small and highly cultivated peninsula, between the mouth of a small stream called Allen River and the

Annapolis River. It is a compact little town; but has not increased rapidly. A village called Caledonia, has sprung up on the opposite side of the river, and appears to be thriving. The old fort, originally erected by the French, still remains, and is garrisoned by a company of soldiers. It forms an agreeable promenade to the inhabitants of the town.

Bridgetown is a prosperous town about ten miles Eastward of Annapolis, and has much the aspect of a New England village. Laurencetown is a small village.

The finest and most populous part of this county is the large valley of the Annapolis river, which throughout its whole length, is thickly settled, and cultivated. As an agricultural district, its most marked characteristic is the number of fine orchards, and the extent of the cultivation of Indian corn; which is greater than in any county of Nova Scotia except King's.

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 population of this county was in 1838, 13709. It is now above 16000.

The broad valley between the North and South mountains of King's County, is one of the most beautiful parts of the Province. Its gently undulating surface, great breadth of cultivated land and marsh, its fine orchards, and the slopes and precipices of the hills bounding it, all contribute to the attractiveness of its appearance. This valley is the principal seat of the population; but there are good settlements in New Canaan and other hilly portions of the southern half of the county. Kentville is a pretty village in a low and, sheltered vale surrounded by woods and hills. Though this county has been called the garden of the Province, the practice of agriculture in it is not so skilful as in some of the Eastern counties.

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, Petite 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 undulating, but not elevated; and the soil is somewhat stony; but on the shores of Mahone Bay, in the vicinity of the town of Lunenburg, and of the La Have river, and in many other places, the soil is 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; Bridgewater on Lahave River; New Dublin; and New Germany on the La Have river.

The townships of this county are Chester, Lunenburg and New Dublin.

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.

The town of Lunenburg is situated on a peninsula on the East side of the Harbour, on ground rising somewhat abruptly from the water's edge. The town and shores of the harbour have, from several points of view, a fine appearance. Chester is a pretty village, presenting from some points fine views of

the shores of Mahone Bay and the numerous islands which stud its surface. Bridgewater is a thriving little village, and the advantage of being at the outlet of the La Have River, enables it to carry on a large trade, chiefly in lumber and cordwood. The Petite River and other agricultural districts have also a pleasing appearance. This county has a large surface of cultivable soil, and a considerable part of the population is engaged in agriculture. Scientific farming is, however, as yet little known.

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 Colechester; 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 southern 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 country, good and often very fertile; and on the estuaries of the Avon and St. Croix, there are 2544 acres or 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; Hantsport on the west side of the same 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 the Windsor Academy.

The townships of Hants county are Windsor, Falmouth, Newport, Kempt, Rawdon and Douglas.

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 1838 was 11399. It is now probably 14000.

Windsor is a rather well built town, situated in a beautiful agricultural district. In its close vicinity there are large gypsum quarries and fine tracts of marsh land. Hants port and Newport are small villages, the former inhabited chiefly by seamen and ship-masters, the latter an agricultural place.—Maitland is a small village, and is the principal seat of the trade of the Shubenacadie river. It carries on a considerable trade in ships, lumber and gypsum. The County of Hants includes a very large breadth of fertile soil, not surpassed by any in the Province. Agriculture is however, in many of the settlements in a rather backward state; the soil having been much impoverished by supplying hay to the Halifax market.

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 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 dis-

tance 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 station in the Lower Provinces. It was incorporated in 1841.— Its population is about 26,000.

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 principal public buildings in Halifax, are the Province building, containing apartments for the Legislative Council, House of Assembly, Supreme Court, and various Provincial Officers; the Government House, occupied by the Lieutenant Governor; Dalhousie College, the 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 Halifax; and a strong fortification on Citadel Hill, overlooking the town.

The City of Halifax was founded in 1717, 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 population of Halifax in 1838 was 28570. It is now about 38,000.

The county of Halifax extends for about 80 miles along the rocky and barren south coast of the Province; and with the exception of the valley of the Musquodoboit River, contains little fertile soil. — Many parts of its coast are, however, of great value for the prosecution of the fishery. The City of Halifax is situated on the West side of the harbour; on the slope of an eminence crowned by the citadel. It presents a fine appearance from the water, and its harbour is one of the best in the world. The appearance of its principal streets has of late years been much improved, and it has been supplied with water led in by pipes, gas, communication by electric telegraph, and other conveniences proper to large towns. Dartmouth on the East side of Halifax harbour is a large village, and may be viewed as a suburb of the capital, with which it is connected by a steam ferry. Halifax is supported by its foreign and country trade, the garrison, the Provincial government and a few manufactures.

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 Shubenacadio 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 Earleton 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 Strait. These bays are the only harbours of the county.

Its principal rivers are the Stewiacke, a large tributary of the Shubenacadio; 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 Earleton 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 susceptible 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 Earleton.

The townships of Colchester are Truro, Onslow, Londonderry and Stirling.

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 Massachusetts.

The population of Colchester in 1838, was 11,225 It is now about 16000.

Truro is a scattered, but beautiful village, in the centre of a very fine agricultural district. The Stewiacke River in the southern part of the county, possesses an extent of intervale probably greater than that of any other river in Nova Scotia. The belt of country extending along the South side of the Cobequid hills, is a thickly settled and flourishing district, and its importance has recently been much increased by the opening of the valuable iron mines of the Londonderry hills, and the discovery of marble, sulphate of barytes and copper ores, at the Five Islands. Tatamagouche on the Northern coast, carries on an extensive trade in ships and lumber; and on the banks of the French and Waugh's Rivers, and the hills of New Annan and Earleton, there are fine agricultural settlements.

11.—THE COUNTY OF CUMBERLAND.

Cumberland is bounded on the North by Northumberland Straits; on the Northwest 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, Advocate Harbour 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 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 and coal mining which are pursued at the Joggins.

The principal towns and villages are Amherst, the county town, near Cumberland Basin; Pugwash 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 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.

Cumberland is a large county, thickly settled along its shores, but having large tracts of uncultivated land in its interior. Amherst is a neat village, on a level plateau overlooking the extensive marshes at the head of Cumberland Basin. Pugwash and Wallace are rapidly growing and considerable villages, carrying on an extensive trade in ships and lumber; and surrounded by large agricultural settlements, the principal of which are those of the Gulf shore and Wallace River. River Philip, Maccan River, Hebert River and Minudie, have good agricultural settlements. The settlement of the Joggins derives considerable importance from its coal mines and grindstone quarries. Advocate Harbour and Mill village are the principal seats of ship-building, lumbering and the coasting trade, on the south coast.

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 are Mount Thom, Mount Ephraim and Mount Dalhousie. 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 1850 was 67,382 chaldrons.

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 and Durham on the West River. 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 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 1838, was 21,449. It is now about 26,000.

Pictou has a larger agricultural population than any of the other counties, and in its older settlements, the art of farming is in a more advanced condition than in most other parts of the Province. The town of Pictou is closely and somewhat irregularly built, on a slope facing the south, on the North side of Pictou harbour. Its site is agreeable, and its streets and buildings have recently been much extended and improved. Several of the latter are of stone. Shipbuilding is extensively carried on at the town of Pictou and other places in the harbour; and agricultural produce, lumber and building stone are exported. New Glasgow is a large and thriving village, exporting lumber, ships and agricultural produce. The Albion Mines are surrounded by a considerable population, engaged principally in the mining and transport of coal. The excavations at the Albion Mines are very extensive, and are drained

and worked by steam engines. A large part of the older works, was destroyed in 1850 by the falling of the roof; but two new pits have since been opened. The coal is conveyed by locomotive engines on a railroad 5 miles in length, to the extremity of a long wooden pier on the south side of Pictou Harbour, for shipment. Durham and Bellevue are small villages. Ship-building is largely carried on at the latter place.

13.—THE COUNTY OF SYDNEY.

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

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

The largest rivers are the South, West and Right's River, running 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 lime stone; 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, 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 1837 was 7103. It now probably exceeds 12000.

In natural beauty and fertility, Sydney is inferior to none of the other counties; and it contains many fine agricultural settlements. Antigonish is very prettily situated on a raised intervalle, at the base of some picturesque eminences, forming a spur of the Antigonish mountains. A population of Scottish origin predominates in the large settlements of the Gulf shore, Cape St. George, West River, Ohio, Lochaber South River, and in other parts of the north and centre of the county. Tracadie in the south, is chiefly settled by the French.

21.—THE COUNTY OF GUYSBOROUGH.

Guyborough 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 Strait 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 bordering 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, Sherbrooke at the head of the tide on St. Mary's river, and Canseau or Wilmot at the extremity of the peninsula of Cape Canseau.

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

This county was first settled in 1781, '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.

The south coast of Guysboro' is in most parts rocky and barren, and inhabited by fishermen. The villages of Canseau and Sherbrooke, however, in this part of the county, are very thriving and prosperous. The northern half of the county, though in many places hilly and rocky, contains much fertile soil, and some fine agricultural settlements. The harbour of Guysboro' or Milford Haven has much natural beauty, and the town is picturesquely perched on a steep rising ground on its western side. Granite for building and millstones abound in the southern part of the County; and there are large beds of limestone near the town of Guysborough.

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 Strait of Canseau, Chedabucto Bay and the Atlantic; on the North-East by Cape Breton county.

To this county belong Isle Madame and Janvion'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 Arishat 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 shores 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, Grand River and West Bay.

Its townships are Arichat, Maitland, Lennox and Hawksbury.

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.

The most remarkable natural feature of this county is the Isthmus of St. Peters, which connects the eastern and western divisions of Cape Breton. It is less than half a mile in width, and boats passing between the great Bras D'Or Lake and Arichat, are frequently drawn across it by men and oxen. It has been proposed to connect the Bras D'Or with the Atlantic, by a canal crossing this Isthmus. The scenery near St. Peter's, and at some points on the shores of the West Bay and the Bras D'Or, is pleasing; but the greater part of the county is bare and

uninteresting. Arichat consists of a long and irregular street, extending along the shore of the commodious and very accessible harbour of the same name. Its principal trade is the export of fish, and furnishing supplies to fishermen. Many coasting vessels are owned at this port. There are valuable beds of gypsum on the northern side of Isle Madame; and coal measures, not apparently of a very productive character, in the western part of the county. Limestone abounds in many places.

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 Strait 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 Strait of Canseau; Port Hood, Mabou, Margarie and Cheticamp, on the coast of the Gulf St. 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 is 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; Ship Harbour in the Strait of Canseau; and Whykokomagh.

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.

The county of Inverness presents much bold and romantic scenery; and the soil in the vicinity of Mabou, on the Margarie River and Lake Anslie, the shores of the Bras D'Or Lake and the River Inhabitants, is not surpassed by any in the Province. In these districts there are fine agricultural settlements, usually exporting considerable quantities of cattle and farm produce. Port Hood and Ship Harbour are small villages; and these, with Plaister Cove, Mabou and Margarie, are the principal seats of trade. Coal occurs at Port Hood; and Limestone, gypsum and freestone are found at Mabou, Port Hood, Plaister Cove, and several other places.

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 Harbour 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 little Bras D'Or, and Scatari, which is the most eastern part of the Province.

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

In this county are the promontories of Cape North and Cape Enfuné. 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 often very fertile.

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 Bar and coal Mines at North Sydney; Boulardarie; 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. Andrews.

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 in 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.

The town of Sydney is agreeably situated on the Eastern side of the South west Arm of the Harbour; and the neighbouring country, on both sides of the arm, has a pleasing appearance. The Bar at North Sydney is a rapidly growing village, being the place of the shipment of the coal, and the seat of the largest mercantile establishment in the Harbour. The coal is conveyed from the mines to the Bar by a railway. The mines are situated at the very mouth of the harbour, on a rounded promontory, on one side facing the Atlantic, and on the other the harbour.—The natural features of this county are very varied and often of great beauty, and its mineral resources are not inferior to those of any other county in the Province.

SABLE ISLAND.

Sable Island is a dependency of Nova Scotia. It is situated between north latitude 44° and $44^{\circ} 7'$ and between west longitude $60^{\circ} 12'$ and $59^{\circ} 40'$. 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 hillecks, 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 superintendent and several men, who are supported at the joint expense of the governments of Nova Scotia and Great Britain, for the purpose of rescuing and aiding shipwrecked seamen.

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 appointments 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.*

RELIGIOUS DENOMINATIONS.

In the present work, Religious denominations are noticed only in reference to the geographical distribution of their adherents.

* Technically called a Writ of Certiorari

The people of Nova Scotia, in reference to their religious profession, may be included under the two general heads of Protestants and Roman Catholics; the former being much more numerous than the latter.

PROTESTANTS.

1. *The Established Church of England.*—The adherents of this church, are scattered through all parts of the Province, being most numerous however, in the central and Western counties. This church has settled clergymen in 35 of the towns and settlements; under the control of a Bishop who exercises ecclesiastical jurisdiction over this church in Nova Scotia and Prince Edward Island.

2. *The Presbyterian Church.*—The majority of the people of Pictou and Colchester, belong to this church; and its adherents are very numerous in the Island of Cape Breton, and the counties of Cumberland, Guysboro, Halifax and Hants. In the other counties they are comparatively few. The Presbyterians are sub-divided into: 1st. the Established Church of Scotland, having five settled ministers; 2nd, the Free Church of Nova Scotia, having 15 settled ministers; and 3rdly, the Presbyterian Church of Nova Scotia, having 30 settled ministers. There are a few congregations not connected with any of these bodies.

3. *The Associated Baptist Churches.*—The adherents of this denomination are most numerous in the Western counties; in several of which they form the majority of the Protestant population. It has 48

settled ministers, 29 of whom are in the counties of King's, Annapolis and Digby.

There are, in the Western part of the Province, four smaller bodies of Baptists, not connected with the Association, and having in all 17 ministers.

4. *The Wesleyan Methodist Church.*—The adherents of this body are most numerous in the central and Western counties. It has 24 missionaries.

5. *The Congregational or Independant Church.*—The adherents of this body are most numerous in the Townships of Queens, Yarmouth and Halifax. It has only 6 ministers in the Province.

6. *The Evangelical Lutheran Church.*—A considerable part of the German population of Lunenburg belong to this body.

There are in the Province members or societies of several other Protestant denominations, but their numbers are comparatively small.

ROMAN CATHOLICS.

The majority of the people of the county of Sydney, and of the townships of Clare and Argyle, belong to this church. Its adherents are also very numerous in the city of Halifax, and in the Island of Cape Breton. In other parts of the Province they are comparatively few. It has two Bishops, two Vicars General and 30 Priests.

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Section II.—Natural History.

The Natural History of our country is worthy of study on account of the great importance of many natural objects and processes to our subsistence and comfort ; on account of the interest and beauty connected with nearly everything in nature ; and on account of the evidence which it affords of the power, wisdom and goodness of the Creator.

I—CLIMATE.

The climate of a country depends mainly upon its distance from the Equator. In going from the equator toward the poles, the climate becomes colder, and its extremes of cold and heat greater. On this account, the globe is divided into zones, usually named the Torrid, Temperate and Frigid.

Climate also depends on the comparative surface of land and water, in or near a country ; and on its height above the level of the sea, and the prevailing winds. Thus a large surface of land, is warmer in summer and colder in winter than a large surface of water, and a large extent of land near the poles, makes countries lying to the south of it colder.—High mountains and table lands, are also colder

than low grounds in the same latitude ; and countries in which the prevailing winds are from the sea, are usually moist, while those in which the prevailing winds blow over much land, are usually dry.

Nova Scotia is nearly in the middle of the temperate zone, but its climate is influenced by the position of the Province on the eastern side of the continent of North America, by the great surface of the northern part of that continent, and by the prevalence of westerly winds. From these causes, its winters are colder and its summers warmer than those of countries in the same latitude, in Europe and the western coast of America.

It is also influenced by its nearness to the ocean ; 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 twenty 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 $6\frac{1}{2}$ inches fall in the form of snow, making the annual depth of snow about $8\frac{1}{2}$ 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 win-

ter 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 20° . February is seldom much warmer than January, and sometimes colder; and March is still cold and wintry, 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 of 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 on the coasts of the Gulf of St. Lawrence; but the accumulation of ice, during winter, in the Gulf, 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, and of the Northern States. The staple crops are wheat, oats, barley, the potatoes and tur-

nip. 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.

Geology treats of the nature, arrangement, origin, and uses of the rocks, which in all parts of the world underlie the surface soil, or project above the surface.*

Rocks may be arranged according to their origin, in three great classes, viz :

1. *Igneous*, or those which, like the lava of volcanic mountains, have been poured from the interior of the earth in a melted state. They usually occur in the forms of large irregular masses and thick veins; and are often crystalline in their texture. Granite and Trap belong to this class.

* The word 'rock' in Geology includes hardened clays, marls and similar substances; and rocks in place or in mass are distinguished from loose stones. This part of the work may be made more interesting and instructive, by School collections of the rocks and minerals of the neighbouring country.

2. *Aqueous*, or those which have been deposited by water, and have become more or less hardened.— They are usually found in the forms of beds or layers. They often contain shells, impressions of leaves, petrified wood and other animal and vegetable remains, which are called *Fossils*. Sand-stone, limestone and gypsum are of this class.

3. *Metamorphic*, or those which have been deposited by water, and afterwards much altered or half melted by subterranean heat. Slates of various kinds belong to this class.

Rocks of all these classes are arranged, according to their comparative antiquity, or the order in which they rest on each other, into *Formations*; and these are again united in *Systems* of formations.

The principal rock formations of Nova Scotia 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.

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

Granite is one of the earliest known products of the volcanic or igneous forces of the earth. It consists of three minerals, Quartz or Flint, Felspar and Mica. In the granite of Nova Scotia, the quartz is

usually colourless, the felspar white or reddish, and the mica in dark coloured or silvery shining scales.*

Quartz rock is a hard flinty rock of granular texture and usually of grey or whitish colour. It generally occurs in beds or thick layers, and is probably sandstone hardened and altered by subterranean heat. 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.

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

* These three minerals can be distinguished in any piece of granite, and form an example of the fact that rocks are usually mixtures of mineral substances; and also illustrate what is called *crystalline texture*.

In all these districts rocks of the kinds above described prevail. Granite is, however, especially abundant in southern Guysboro, Halifax, Shelburne and southern Annapolis; Quartz rock in southern Guysboro, Halifax and Queen's; Clay slate in Halifax, southern Glants, Lunenburg, and southern Digby; and Mica slate in Northern Cape Breton, Guysboro, Queens and Shelburne.

Useful minerals have not yet been found in this system, though indications of metallic ores have been seen in several places; 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 surface of the primary districts is usually rugged and uneven; and their soils very stony. The districts in which clay slate prevails, for instance, Lunenburg and Yarmouth, have, however, much more productive soils than those in which quartz rock and granite prevail.

THE SILURIAN SYSTEM.

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 a black or dark green mineral named hornblende, instead of mica.

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 long and irregular 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 hills of Sydney. These two belts include the highest hills of the Province.

In Cape Breton the silurian system probably occupies a considerable space, but its general limits are not yet well ascertained.

The useful minerals of this system are iron ore, which occurs in large quantity at Nictaux and Elements, at Folly mountain in Londonderry, and at the East river of Pictou; limestone, which does not however abound in this system; and roofing slate.—Copper ores have also been recently discovered in it.

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, and are often very fertile.

THE CARBONIFEROUS SYSTEM.

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.

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 great 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, and a great part of Richmond and 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 mea-

ures of Cumberland, Colchester, Pictou and Cape Breton, which contain beds of clay ironstone.

The principal localities of beds of gypsum are 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, Mabou and Lennox passage.

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.

The New Red Sandstone is a much later deposit than the carboniferous system, and probably corresponds with the 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 shore 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 range of hills 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, 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. It also contains veins of Magnetic Iron ore and copper ore.

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 intervals on the margins of most of the rivers of the Province.

III—ZOOLOGY.

Zoology treats of the natural history of the Animal kingdom, which consists of four great divisions or sub-kingdoms.

I.—THE VERTEBRATED ANIMALS,

Forming the first great division 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, (*Vesperugo*.)—The Bats are distinguished by the broad membrane stretched over 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 but is of small value.

6. The WOLVERENE OF 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 (*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 very valuable. The Ermine is brown in summer and becomes white in winter.

8. The LYNX or WILD CAT, and the LEOPARD.

VIER 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 1835, when a few individuals made their appearance, and are 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 Falvus*); is rather abundant in Nova Scotia, and subsists on small quadrupeds and birds, occasionally destroying domestic fowls. The cross, (*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.

3 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 colours, 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*), and 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 on 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 courses 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 OF 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 it occasionally eats 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.

9. 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.

8. 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 Taran-dus*); 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*); the 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.—Birds of Prey.

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, Horned Owl, &c.

Order 2.—Perchers.

1. The SHRIKES; (*Laniidae*), 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 wood peckers, 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 insects and honey, 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 Swallow 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.—*Climbers.*

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 Downy, Hairy, Golden-winged, Yellow-bellied, Three-toed, and Red-headed Wood-peckers

Order 4.—*Scrapers.*

1. The GROUSE, *(Tetraonidae)*. The species of 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.—*Waders.*

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 characterised 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.

3. 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, (*Charadriidae*), 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.—Swimmers.

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 belong 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, (*Podicepsidae*), 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 Dobeck 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, the fresh water Tortoise (*Emys*), found in the rivers and streams, a few species of Snakes and some small Lizards. There are also several 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 and horny scales.*

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. Several other species of mackarel occur on our coasts. The Tunny or Albacore, which sometimes attains the length of ten feet, and is occasionally harpooned by fishermen, belongs to the mackarel family.

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 it is almost valueless for food.

4. The SCULPIN (*Cottus*), is very common in harbours 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 (*Cobitis*) 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 spears, 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 form 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 OF GASPEREAUX, (*Clupea Vernazis*). 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 wares 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 Aeglefinus*), 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, (*Platessa*), is common on all sandy or 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, and bony plates or points on the skin.

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 Glauus*) and the Basking Shark, (*Stelche Maximus*). The two first are dangerous to bathers, but are very rare, and may be considered as stragglers from warm climates.

2. The SKATE or RAY, (*Raja Batis*) is common on the coast of Nova Scotia, and is often taken by fishermen, but is not much esteemed. The Sting Ray, a species having a serrated and pointed bone attached to its tail, is also sometimes taken on our coasts.

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.

II. 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 purpose of a covering to protect the body, and of a skeleton to support their muscles.

This division includes the Worms, the Crustacea, the Spiders, the Centipedes, and the Insects.

I.—THE WORMS.

The most important animals of this class, are the Earth Worm, which burrows in rich soils, feeding on decayed animal and vegetable matter; The Leeches, which inhabit fresh water, and subsist by sucking the blood and juices of animals; and the marine worms, many species of which are found on sandy and muddy shores.

The operations of the earth worm, by loosening the soil and throwing up new mould to the surface, are very useful to the farmer. The medicinal Leech has long been extensively used in the healing art;

and the marine worms furnish food to many fishes and are used by fishermen as bait.

2.—CRUSTACEA.

These animals are all aquatic. The best known species, on the coast of this Province, are the common Lobster and Crab. There are however, a great number of small species, as the Shrimps, Sand hoppers, &c. some of which are so small as to be scarcely visible to the naked eye.

3.—THE SPIDERS.

There are many species of spiders, all subsisting on flies and other insects, for snaring and entrapping which they have been endowed with many very singular instincts. This class also includes the flour and cheese mites.

4.—THE CENTIPEDES

Have wormlike bodies, and very numerous short feet. The most common species is an active little creature, found in manure heaps, decaying wood &c., and preying on small insects. There are other species of more sluggish habits, and feeding on vegetable substances.

5.—INSECTS.

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 Bugs, (*Coccinella*), which are useful in destroying the lice that infest trees; belong to this order.

The larvae of the water beetle live in ponds and ditches, and prey on small animals found there.— Those of the turnip fly are little grubs which burrow in the leaves of plants. Those of the Lady Bugs live on leaves, and feed on the little insects which they find there. There are a vast number of species of beetles, many of them of very singular appearance and habits.

Order 2.—Orthoptera.

Or straight winged insects, are distinguished by possessing two pairs of wings, and jaws fitted for mastication. The Crickets and the Grass-hoppers, 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.

The dragon flies prey on small insects, which they catch on the wing. Their Larvæ, as well as those of the Day Flies, live in water. The latter are light and delicate creatures, often appearing in great numbers in summer, by the sides of rivers and lakes.

Order 4.—Hymenoptera.

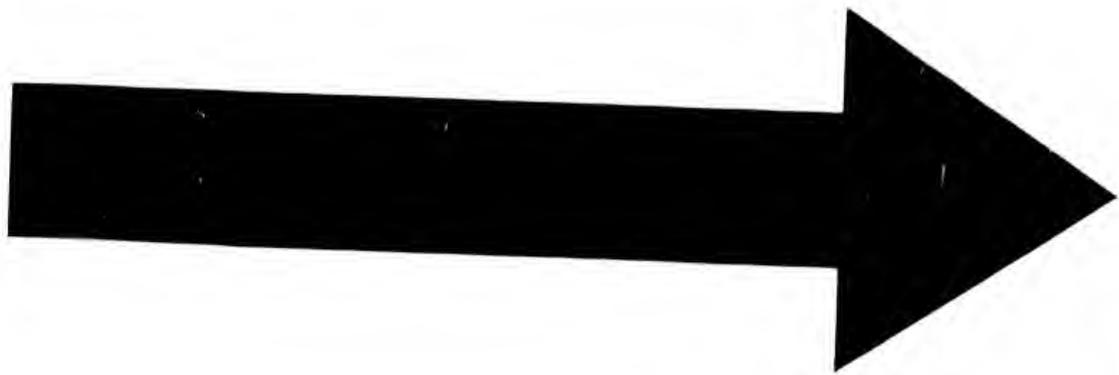
Have four membranous wings, less numerous than those of the Neuroptera, and united to each other at their margins; they have also jaws adapted rather for suction than mastication. The Wasps (*Vespidæ*); the Bee, (*Apis*); the Humble Bees, (*Bombus*); and the Ichneumons. Ex. the Wasps and Bees are remarkable for their instinctive powers of constructing nests and cells, for the reception of their young, and of the honey which they store up for their use: The Ichneumons deposit their eggs on the bodies of caterpillars, on which their larvæ feed, and thus greatly reduce the numbers of these noxious creatures. The ants also belong to this order.

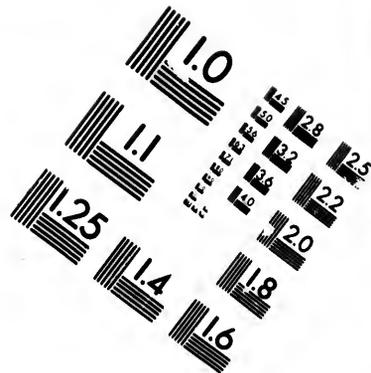
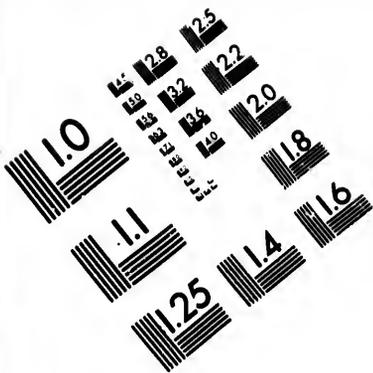
Order 5.—Homoptera.

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 Cicadæ or Singing Locusts; and the Plant Lice, (*Aphidæ*), which often swarm on the leaves of trees and vegetables, and by sucking their sap, greatly weaken and injure them.

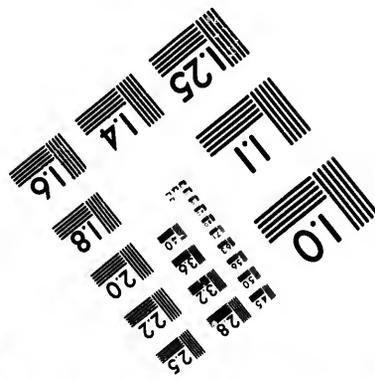
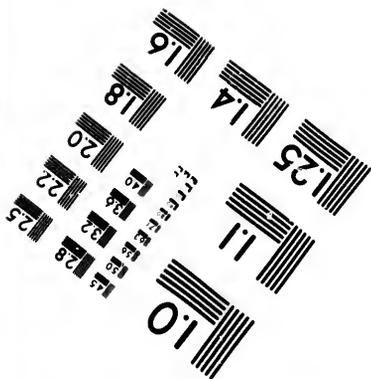
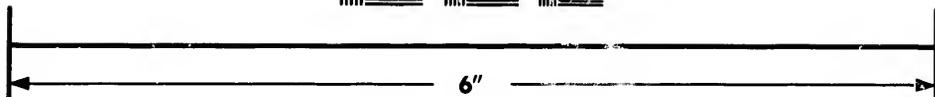
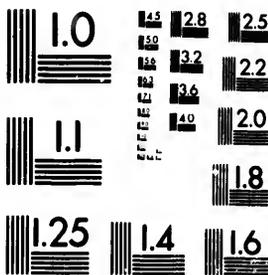
Order 6.—Heteroptera.

The insects of this Order, like those of the last,





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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, (*Cimex*) ; 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 the 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 larvae of the Mosquitoes inhabit pools.—Those of the Harry-long-legs burrow in the ground, and eat the roots of grass. Those of the Flesh and House Flies, commonly called "maggots," feed on decaying animal substances. Those of the wheat fly, live within the chaff of the ear, and suck the jui-

ces of the young grain. In autumn, they descend into the ground, and re-appear as flies in the following summer.

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.

III.—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*).

IV.—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.

Botany treats of the Natural History of the vegetable kingdom, which forms two great divisions or sub-kingdoms, the *Flowering* and *Flowerless* Plants.—These are sub-divided into *classes* and *orders*!; and also into smaller groups named *genera*, each containing several species or kinds.

The wild plants of Nova Scotia are too numerous to allow even a list of them to be given in this work. A few of the principal orders only will be mentioned; and species which are remarkable for their value to man, or for their interest and beauty, will be given as examples.*

1. FLOWERING PLANTS.

The order, (*Nymphaeaceae*) or that of the Water Lilies, includes the fragrant white Pond Lily (*Nymphaea Odorata*) and the yellow Pond Lily (*Nuphar Advena*); which ornament the surfaces of our Lakes and Ponds.

The order *Sarracenia* includes the singular and beautiful Indian cup (*Sarracenia Purpurea*) of our bogs, whose cup shaped leaves and "side-saddle" flowers are among the most curious vegetable productions of our country. A yellowish sarrac-

* It will be found a pleasing and instructive amusement, to collect specimens of the leaves and flowers of the plants named under each order, and compare them so as to discover their family resemblances and specific difference. Wood's first Lessons in Botany, or any other small work containing descriptions and figures of the structures of plants, will be found a useful aid.

sometimes found' with the crimson kind. It appears to be merely a variety.

The order *Araliaceae* includes the Sarsaparillas (*Aralia*) and the ginseng (*Panax*) which are abundant in our woods and swamps, and well known on account of their medicinal virtues. They have elegant divided leaves, and clusters of small white flowers succeeded by berries.

The Order *Grossulaccae* includes the Wild Gooseberry, (*Ribes Oxycanthoides*), a small but agreeable fruit; and two species of Wild Currants, the wild black and red or rock currant. Both are much inferior to the cultivated Currants.

The Order *Acerinac* contains the White Sugar Maple, (*Acer Saccharinum*); the Black Sugar Maple, (*A. Nigrum*); the White or soft Maple, (*A. Dasyarpum*); the Red Maple (*A. Rubrum*); the Moose Wood or Striped Maple, (*A. Striatum*); the mountain maple, (*A. Montanum*). 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 *Rosaccae* contains a great number of plants, distinguished on account of their beauty and utility. The Rose family includes the the Wild Rose and Sweet Briar, (*Rosa Porviflora* 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 Apple family includes the medlar or Wild Pear, (*Aronia Botryapium*); a tree which is worthy of cultivation, as its fruit, though small, is agreeable and abundant; and its flowers very orna-

mental ; the choke berry (*A. Arbutifolia*) ; the Rowan or mountain Ash, (*Pyrus Microcarpa*) ; and the Wild Hawthorn, (*Crataegus*).

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

The Order *Anacardiaceae* includes the Sumach, (*Rhus Typhina*), a pretty ornamental tree ; and the Poison Vine (*Rhus Toxicodendron*). The latter is a creeping plant growing in fields and woods. Its juice is very poisonous.

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

The Order *Betulaceae* 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 intervals.

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 *Ericaceae* 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*).

It also includes the fragrant Mayflower (*Epigaea Repens*); the Sheep and swamp Laurel, (*Kalmia*); the Rhodora, (*R. Canadensis*); the Labrador tea, (*Ledum*), and other interesting and beautiful plants.

The Order *Caprifoliaceae* includes the Cornelis, (*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 Moose Bush, (*Viburnum Lantanoides*) ; and the Tree Cranberry (*V. Oxycoccus*), whose berries in appearance and taste resemble the true Cranberries.

It also includes the beautiful Twin flower (*Linnæa Borcalis*) ; and the Bush Honey suckle (*Diervilla*)

The order of the Leguminous plants (*Leguminosæ*) contains the Pea and Bean tribes, the prettiest wild example of which is the Beach Pea (*Lathyrus Maritimus*) ; and the clovers (*Trifolium*). The ground Nut, (*Apios*) also belongs to this order.

The Order *Compositæ* includes a great number of plants having heads of compound flowers ; as the Star flowers (*Aster*), and the Golden Rods (*Solidago*). A number of weeds introduced from abroad, as the Dandelion, White Weed, Thistle and Burdock, belong to this order. Many of these plants are remarkable for their bearded seeds, which are carried to great distances by the wind.

The Order *Labiatae* contains the little Self Heal or Blue curls (*Prunella*), so frequent in dry pastures ; the Horse Mint and Spear Mint (*Mentha*) ; and the ground Ivy, (*Glechoma*). The cultivated Sage, Marjoram, Lavender &c belong to this order.

The Order *Orchidaceæ* contains the beautiful Ladies Slippers, (*Cypripedium*) Grass Pink (*Cymbidium*). Habenaria, and similar plants, distinguished by the very irregular and singular form of their flowers. Most of them are swamp plants.

The Order *Liliacæ* includes the beautiful Orange Lily of the river intervals (*Lilium Canadensis*) ; and the Solomon's seal and Wild Lily of the Valley (*Convallaria*). The cultivated Lilies, Tulips, Hyacinths and Onion, belong to the same order.

The Order of the Grasses (*Gramineæ*) is one of the most important to man in the whole vegetable kingdom. It includes all the numerous species of grass properly so called, as well as wheat, oats, rye, Indian corn, and other grain-bearing plants. In the grasses, those parts of the flower which in the ordinary flowering plants are most showy, have the form of chaffy scales.

The Sedges, which are closely allied to the grasses, form a separate order.

2. FLOWERLESS PLANTS.

These are extremely numerous, but in general they are less showy and important than the flowering plants: though the beauty of their stems and leaves often compensates for their want of flowers. The following are the principal tribes of Flowerless plants.

1. The Horse tails, (*Equiseta*), whose hollow jointed stems, surrounded by whorls of leaves, may often be seen in wet and swampy places.

2. The clubmosses and ground pines (*Lycopodia*) which are usually trailing plants, intermediate in appearance between mosses and the fir tribe. They are very abundant in the woods.

3. The Ferns or Brakes (*Filices*), of which there are a great number of species, whose elegant leaves ornament the woods, plains and swamps.

4. The Mosses (*Musci*) and Lichens (*Lichenes*) which clothe the surfaces of cradle hills, bogs, decaying wood and stones. The Mosses have usually small stems and slender leaves. The Lichens have generally the form of flat crusts, in some species sending up irregular knobs or branches with coloured extremities.

5. The *Fungi*, including the Mushrooms, Puff balls, Touch wood &c.; as well as the Dust Brand,

Smut and Rust of grain, and common mould. The seeds of the fungi, as well as of the mosses, are very small and dust like, and excessively abundant.— This accounts for the rapidity with which they spread, and the singular situations in which they are often found. Most of the Fungi grow from decaying substances, or are parasites on living plants, into whose stems and leaves their minute seeds pass with the water taken up from the soil, or are carried by the wind.

6. The Sea weeds (*Algae*). These are the peculiar vegetation of the sea, though some of the smaller species are found in fresh water. There are numerous species on our coast, some of them, especially the smaller, very beautiful in their forms and colours. The Sea weeds furnish food to a great number of marine animals; and when washed on shore, form a valuable manure. Some of the species are used for food. Kelp or soda for soap making, is also obtained from the ashes of some of the most common kinds.

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