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*A. Sawyer*

No. 6.

1885.

June.

THE  
**CANADIAN SCIENCE**  
**MONTHLY.**

DEVOTED TO THE INTEREST OF

*Canadian Naturalists and designed to encourage the popular study of the Natural Sciences.*

**Canadian Postal College of the Natural Sciences.**

This Institution aims to awaken and foster a more general interest in Scientific knowledge, to induce young men and young women to engage in systematic study at home, and to afford its members the means for mutual assistance in the pleasing and ennobling study of Nature's works. All efforts used to make the connection or students with this Association pleasant and profitable.

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A. J. PINEO, KENTVILLE, N.S.

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A large lot of shells and fossils to be catalogued soon.

# Canadian Science Monthly.

VOL. III.

KENTVILLE, N. S., JUNE, 1885

No. 6.

## *GLACIAL MORAINES IN P. E. ISLAND.*

One feature of the Boulder Formation in P. E. Island which has not been noticed by geological writers is the Glacial Moraines.

The surface of the Island is low and undulating, none of its soft verdure-clad swells rising 400 feet in height. When seen from the hills of Nova Scotia it looks like a low blue cloud lying close down on the far verge of the gleaming Gulf, and received from its Indian inhabitants the poetic name of Abequid, or "Lying on the waters."

We are accustomed to look among the mountains for traces of glaciers and not in such a district as this. But here they are unmistakable in those huge mounds that stretch like ancient ramparts across many a peaceful valley.

On the St. Peters road, about six miles from Charlottetown, is a line of mounds a mile in length, composed of clay, sand, and rounded stones, piled up thirty feet in height, and so steep as to be left uncultivated. They occur in the bottom of an open valley and were evidently formed by a glacier which moved down the long gentle slope of land to the N. East.

On the Rustico road, where a long southward slope dips to the wooded dell, which shadows the narrow rivulet that forms the head waters of the North River, there is an assemblage of crowded and distorted moraines piled by the side of the stream. The road is cut right through one of them, and a good section of the masses of rounded pebbles and stones which it contains exposed to view.

Further down the North River, below More's Mill, a number more are to be seen, one magnificent mound running parallel with the stream, shadowing its narrowed waters with the rich foliage of birch and spruce that hangs on its precipitous front.

A partly obliterated moraine runs across Charlottetown park, and at Brighton, in the vicinity, a very fine section of one is given in the river bank, showing the

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large masses of well rounded stones which it contains. But we need not particularize. In every part of the country where there are considerable slopes, or valleys descending from the hills, piled moraines or masses of rolled pebbles attest the action of glaciers. Sometimes a moraine will rise abruptly in the middle of a waving grain field, or add ruggedness to a wooded dell, or stand out picturesquely, as an isolated tumulus, in the level marshy plain that borders the flowing river.

These numerous moraines attest the fact that at some time in the Boulder period glaciers almost completely covered the surface of P.E. Island. They were local glaciers however, having their line of motion determined by the direction of the slope and valleys of the country. I have observed many lines of glacier striation on the rock surface underneath the Boulder clay, and always found their line of direction to be determined by the slope of the country or the direction of the valley in which they occurred.

Universal as were the frozen fields of gleaming ice on hill and vale and broad champaign, there are still localities, where we do not find evidence of their operations. One of these places is the steep southern face of the Tea Hill range, and another is the narrows at the entrance of Charlottetown harbor. In the first situation, there was no room for a snow field to feed glaciers, and in the others strong tidal currents must always have sought the entrance and prevented their accumulation.

What a desolate scene must our fair land have presented in that dread night of the Glacial Period! Everlasting fields of snow spread their white sea of death to the cold gleam of the arctic sky broad over all the buried hills, while spectral glaciers hung their icy sheets on every slope and valley. Our coast was crowded with vast floes of ice which never disappeared in the fairest summer day. Giant bergs, with their flashing towers and azure caverns, careered through our seas resplendent in the light of the July sun. The crash of floes, the thunder of conflicting bergs, the reverberation, of deep ice caves, and the cannon-like report of severing coast glacier never ceased except when every sound was hushed in the depth of the Arctic winter.

The savage Polar bear then haunted our bays. The huge Walrus, the Narwhal, and the Greenland Seal, with its dog-like coun-

tenance, found their home by our shores. Flocks of northern fowl, as the Penguin, the Auk, the Puffin, the Eider Duck, the Gannet, and the Ivory Gull, amid the crystal floes and ivory towers of winter, sought, where broke the deep cerulean wave, a hardy living, or swept with most graceful wing the keen arctic sky, fair forms of nature's beauty amid her desolation. We know, too, that the little snowy valved *Yellina*, the pearly *Saxicava*, the *Pecten*, the *Mussels*, and the *Astarte* lived in the quiet bays, whose blue bosoms the summer's sun would open to reflect the cold gleam of glacier and snowfield. And even at the very feet of the ice torrents, where a few yards of sheltered soil were bared, the Arctic plants would spread their bright blossoms, as a sweet token of the brighter day prepared ahead.

F. BAIN.

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### MINERALOGY.

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#### PAPER VII.—THE ZEOLITES.

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The family of minerals known as the zeolites are somewhat related to feldspar in composition, they being complex silicates, all yield water when heated in the closed tube, and most of them gelatinize with hydrochloric acid. The name zeolite is of Greek origin, signifying a stone that boils, applicable on account of the bubbling of the minerals before the blowpipe. The name *Trap Minerals* is often applied to this group because they are frequently found in cavities and fissures of eruptive rocks. But these also occur in granite and gneiss. These minerals probably originate in the decomposition of the rock, mostly by superheated water in which the material is dissolved. After soaking into the cavities it gradually evaporated leaving the mineral in crystals. Some of them, as heulandite, seem to be formed in the cold rock. Among the more important zeolites are natrolite, thomsonite, analcite, chabazite, stilbite and heulandite.

## NATROLITE.

This mineral usually occurs in radiating groups of long slender square prisms terminating in blunt pyramids. The color is white, shading on yellow, brown or red. Transparent to translucent. Brittle. By means of the blowpipe it fuses easily to a clear glass.

## THOMSONITE.

A mineral resembling natrolite but differs in fusing to an opaque white globule. It usually occurs in radiated masses of a white color and vitreous to pearly lustre. Hardness 5.5

## ANALCITE.

This occurs crystallized in trapezohedrons, usually white or grayish but sometimes colorless. Lustre vitreous. Hardness 5. Fuses to a colorless glass, without intumescence. Becomes slightly electric when rubbed or heated.

## CIABAZITE.

Always found in crystals, and usually of a rhombohedral form closely resembling the cube. Color white or red. Lustre vitreous. Transparent to translucent. Hardness 4 to 5. Fuses by the blowpipe to a white spongy mass. It is often found lining geodes in trap rock.

A red variety of this mineral found in Nova Scotia is called *Acadialite*.

## STILBITE.

This is one of the most interesting of the zeolites. It usually occurs in sheaf-like aggregations of their crystals, but often in flattened rectangular prisms terminating in low pyramids. Also found in silky incrustations. Twin crystals are rarely found.

Cleavage perfect. Lustre pearly on sides of crystals, vitreous elsewhere. Color white or yellow, occasionally brown or red. In 1881 Mr. A. J. Pineo, Editor of this Journal, discovered a green mineral in the Trap rock near Black Rock, N. S., which was identified by myself as a new variety of stilbite. The hardness is 3.5 to 4. Before the blowpipe it exfoliates into fan-like forms then fuses into a white enamel. Does not gelatinize with acids. The transparent varieties exhibit double refraction strongly. The mineral is often found lining large cavities in trap rocks.

## HEULANDITE.

Occurs in rhomboidal crystals resembling a double wedge, with perfect cleavage parallel with the sides. Lustre, hardness and blow-pipe character like stilbite, but easily distinguished by its scaly stialine forms. Color white, often pink or brown.

Probably the most noted region of the world for the zeolites is the trap rocks about the Minas Channel and the Bay of Fundy in Nova Scotia. Blomidon and the vicinity of Black Rock are perhaps the most productive regions. The islands along the western part of the Basin of Minas also furnish many beautiful specimens. Bergin Hill, N.J., is another noted place for zeolites.

S. K. HITCHINGS.

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*THE OLDEST KNOWN TERRESTRIAL ANIMAL.*

The March number of the MONTHLY (Ed. notes) announced the discovery of a fossil scorpion in the Island of Gotland. This animal which has received the name of *Palæophoneus nunciatus*, was found in the upper Silurian region formation. Up to that time the most ancient known animals were the *Libellules* found in the Devonian region of Canada. The *Palæophoneus* is therefore more ancient than these insects. We find in fact in the middle Silurian the wing of an insect similar to the *Blatta*. This discovery was made in France at Jurgues (department of Calvados) The celebrated geologist Charles Brongniart, who has made a special learned study of this subject has given this insect the name *Palæoblattina Douvillei*.

There is ground to hope that these interesting discoveries will be followed by many others. It appears in fact that a scorpion similar to that of the island of Gotland, has been recently found in Scotland at Lesmahagow (Lanarkshire,) like the latter in the Upper Silurian region.

At present the *Palæoblattina Douvillei* is the oldest air breathing animal known.

J. M. EMILE BONNET.

Montpellier, France, May 28th, 1885.



*CRITICAL NOTE.*

BY ERNEST E. T. SETON.

A more careful consideration of the matter of avifaunal distribution, leads me to write again on the subject, and to confess that except in one or two minor points, I was very far astray.

The general statement made by me, was, that the seven Thrushes mentioned and the Eastern Bluebird, are "abundant throughout Eastern North America." This is a most erroneous generalization. The remark will apply only to the Robin, the Hermit Thrush and the Olive-backed Thrush. The Wood Thrush is a bird of the Eastern United States and though common in South Ontario, and given as not uncommon at Montreal, it is not recorded from Ottawa. There is I believe only one record from Maine and none from the Maritime Provinces. The Veery is scarcely "abundant" in the Eastern Provinces, for although a summer resident of the Maritime Provinces it is not as commonly met as are the other three species named. The Catbird though common as far north even as Ottawa is rare in the Maritime Provinces and not recorded from P. de Monts.

The Thrasher is a bird of the Eastern U.S. and not found as far north as New Brunswick, although abundant about Toronto and "becoming common" at Montreal. The Bluebird is very rare in the Maritime Provinces and even more so at P. de Monts; though common at Montreal and Ottawa and abundant in South Ontario. I have, as Mr. Chamberlain points out, omitted the Gray-cheeked Thrush. This I did because my papers were meant only for the beginner and it seemed to me undesirable to enter into varietal distinctions. As however this may prove a distinct species, I here add:

Gray-cheeked Thrush (*Turdus swainsoni aliciae*). Closely resembles the Olive-backed Thrush, differing mainly in being without any buffy tint about the head or a yellowish ring about the eye. Its history is obscure; its range is extensive, including perhaps all of British North America east of the Rocky Mountains.

NEW ARRANGEMENT OF THE VEGETABLE  
KINGDOM.

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Willkom has given in the *Botanisches Contrablatt* the following as his proposed arrangement :

FIRST KINGDOM, SPOROPHYTA.

*Division I. Thallophyta.*

Class I. Mycetoideæ; orders, 1 *Myxomycetes* and 2, *fungi*.

Class II. Phycoideæ; orders, 3 *Lichenes*, and 4, *Alge*.

*Division II, Cormophyta*

Class III, Protonemaceæ; orders 5, *Hepaticæ* and 6 *Musci*.

Class IV. Prothallionatæ; order 7, *Equisetinæ*, 8, *Lycopodinæ*, and 9 *Filicinæ*.

SECOND KINGDOM, SPERMATOPHYTA.

*Division III. Gymnospermæ.*

Class V. Pseudocarpæ; orders 10, *Cycadææ*, *Taxinææ*, 12 *Coniferæ* and 13 *Ambiguæ*.

Class VI. *Acotyledoneæ*; order 14, *Rhizanthææ*.

Class VII. *Monocotyledoneæ*; orders, 15 *Fluviales*, 16 *Spadicifloræ* 17 *Principes*, 18 *Glumaceæ*, 19, *Enantioblastæ*, 20 *Helobiæ*, 21 *Gynandrææ*, 22 *Scitamineæ*, 23 *Ensateæ*, 24 *Artorrhizææ*, 25 *Coronariææ*.

Class VIII. *Dicotyledoneæ*, orders from 26 to 71, including each more than the orders of Gray.

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THE CHOLERA IN SPAIN.

In connection with this subject there are certain facts of considerable importance from a scientific point of view.

It is well known, that the Cholera, which made such terrible ravages in Western Europe last year, has some time since reappeared in some of the towns of Spain, principally in the province of Valence. As a prophylactic measure against this scourge Dr. Ferran, a distinguished Spanish physician, conceived the idea of inoculations analogous to those used for the prevention of Small Pox. A large number of persons received this anti-cholera

vaccine, and it appears that a very small number have been attacked by the disease. The following goes far to prove the efficacy of this measure. In the town of Algemesi, containing 12,000 inhabitants there have been 263 cases of Cholera and 114 deaths. Dr. Ferran inoculated 898 persons, of these eight only took the disease and of these eight, only one succumbed. If those figures are exact, which everything leads us to believe, the discovery of Dr. Ferran is one of the most beautiful inventions of modern science.

The Spanish Government hastened to order an investigation and appointed a commission for examination of the results of inoculations.

We anxiously await the result of this investigation and the report of the Academy of medicine.

The people of those countries in which this scourge still survives have great confidence in the method of Dr. Ferran. Whatever town he visits they receive him as a true hero and exert themselves to give him an enthusiastic welcome.

It is useless to add that this discovery has provoked numerous criticisms from the profession. While some strongly advocate the efficacy of Dr. Ferran's method, others proclaim his treatment useless or even dangerous, and finally some pretend that the anti-cholera vaccine has no physiological effect whatever, but only a moral effect which tends to aggravate the evil in allaying their fears and giving perfect tranquility of mind to those who have been inoculated.

In presence of this diversity of opinion it is wise to await the report of the Academy of medicine which we will hasten to make known to the readers of the MONTHLY as soon as the work of the commission shall have terminated.

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“ God of the granite and the rose !  
 Lord of the sparrow and the bee !  
 The mighty tide of Being flows  
 Thro' countless channels, Lord, from thee ;  
 It leaps to life in grass and flowers,  
 Thro' every grade of being runs,  
 While from Creation's radiant towers  
 Its glory flames in stars and suns.”

—Selected.

*MUSKOKA.*

## PART II.

BY JOHN B SPURR.

The physicist's attention is drawn to the fact that the soil, so thinly scattered over the rock, is productive when the heat of summer is sufficient to bake the earth and warm the rock below. This to a certain extent may be done but the economy of the lakes must not be overlooked in answering the question; for, with the evaporation of water there is consequently a humidity to the climate which favors the growth of vegetation on the sparse soil.

A humid climate is not always an omen of good health so we must seek other cause to account for the robust appearance of the population, of Muskoka. It is not satisfactory evidence to say that it is the country, for there are some country places whose statistics of health are not as favorable in proportion to the number of their inhabitants as those of the cities.

Muskoka is rich in forest and in most places, the deciduous trees predominate although at a glance the reverse seems evident owing to the height the evergreens attain over their more lofty congeners. Almost everybody knows the relation between plants and animals, how the heat and life of the body is sustained by oxygen, while the fibrous tissue of plants is greatly dependent on carbonic acid gas, and while both these elements are found in the air, the human body in respiration combines the carbon with the oxygen and in exhalation passes it off in the gaseous state. In plants the reverse takes place, the carbon is assimilated and the oxygen freed; at night however there is a slight reaction, hence the use of plants in a sick room during the day and their injurious effects at night.

Now in Muskoka where the vegetable is in excess of the animal life and the consumption of fuel limited, it follows as a matter of consequence that there will be more oxygen in the air than where the dense population and furnaces of cities are making carbonic acid and there is no antidote. In the former instance there is a copious supply of oxygen which is a heat producer and life sustainer, and

in the latter an excess of that which in too great a proportion is injurious to health. The ruddy appearance of its people there is no longer a mystery for the oxygen with which they are necessarily connected keeps the blood in its normal condition, being a natural purifier.

The naturalist's thoughts ramble in various directions, even in the same individual, so that it would be difficult to pursue in a concise manner those most interesting to the uninitiated. My last words will be confined to the bush itself, or more strictly speaking, the animated nature found within its precincts.

The forest giants of Muskoka are fast disappearing, and the happy hunting ground of the Indian is being desecrated by the settler's shanty. The deer are becoming scarce and the moose is seldom seen or heard of; nothing now remains of those antlered monarchs to relate their history but the preserved heads over the doorways of the hotels; there will no doubt be a time when no vestige of them will remain and the historian will have to turn his steps to the museums if he wants to find an account of what existed in the ages of the past. The bear, wolf, and fox are rapidly becoming extinct at the hands of the hunter, and there is hardly a sound in the bush save the twitterings of birds, the chattering of squirrels, and the shriek of the blue jay. The black squirrel seldom makes his appearance as far north while the little chipmunk thinks his striped coat of many colors should on no account be excluded from its fauna, and to make himself conspicuous, sits on the top of a log chirruping his war note of defiance to the intruder. Aware of his own agility he stays to the last moment, then retreats to his burrow in the ground.

The flora is very similar to that of the more settled districts though wider in its profusion. The Moose-wood is a notable characteristic in the underbrush, its leathery branches bearing a great resemblance to the antlers of the animal from which it takes its name, and on account of its tenacity to life is found very difficult to eradicate by the settler. In many places can be found the Ground Hemlock and Cedar, interspersed by wintergreens and cryptogamous plants forming a verdant carpet of the most durable type so much so that continued walking on it

makes very little impression and the novice in the bush may easily be led from the track.

There is always something to attract our attention in the plant whose flowers survive the longest; so my concluding remarks upon Muskoka will be confined to the Dwarf Cornel (*Cornus Canadensis*) whose white flowers are conspicuous when all its rivals are dead. There is very little difference between this and its English cousin *Cornus Tuecsia* whose red berries are held by the Scotch to arouse an unsatisfied feeling of hunger when eaten, in a like manner as thirst is aroused by taking too much salt into the system. *Canadensis* however prefers the damp swamp to an elevated district, just the reverse of *Tuecsia* which delights in a mountainous moorland, where the bracken and heather (*Calluna Vulgaris*) shelter it from the sun's rays.

There are many other thoughts likely to suggest themselves to a naturalist in his rambles through Muskoka but enough has been said to show that apart from its practical value there is something in this wild and rugged country worthy of mention.

JOHN B. SPURR.

Bradford, Ontario.

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#### A FISH-EATING PLANT.

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Considerable attention has been attracted to the fish-eating habits of the common bladderwort, the first known plant which feeds not merely upon insects and such-like inferior creatures, but upon the head and crown of the animal kingdom, the lordly vertebrates in person. Perhaps, therefore, some brief account of the murderous waterweed itself, and of its usual mode of proceeding in capturing its pray, may not be unwelcome at the present time. The plant was known to catch small insects and fresh water crustaceans in its tiny traps, and to use up their bodies as manure for their own development; but it was not yet known to be distinctly piscivorous. Last May, however, Mr. G. E. Simms, of Oxford, England brought Professor Moseley a specimen of *Utricularia* in a glass bowl, in which were a number of young roach, just hatched

out of spawn lying at the bottom. Many of the small fry were seen dead, held fast in the firm bladder-jaws of the murderous plant. Professor Moseley being interested in this wonderful discovery of a fish-eating weed, secured another *Utricularia* and put it into a separate vessel, with fresh spawn and young fry of roach. In about six hours more than a dozen of the fish were caught in the wee greenings. In most cases the fish were caught by the head, and when this is so the snout is pushed into the bladder as far as it will go, till it touches the opposite wall, leaving the tail of the poor struggling thing half free outside. Sometimes, however, the bladders catch the young roach by the tail, a fact which proves the truth of Mrs. Treat's view that the valve actually snaps at the prey, instead of merely allowing it to enter it passively. In one of Professor Moseley's specimens; a fish was caught by the yelkbag, which fry carry in their early stages attached to their stomach: and in another instance two bladders had got hold of the same fish, one trapping it by the head and the other by the tail.

Seen under the microscope the semitransparent green traps, with the tiny silvery bodies of the dead fish half protruding from them, form very striking beautiful objects. The big black eyes of the fish show out clearly by the transmitted light shown through the green wall of the cell that has caught them. Preserved in spirits, the specimens are less interesting, because then the bladder loses its green color, and the force of the contrast is considerably weakened. After the fish have been for some time trapped they assume a slimy deliquescent appearance, and are rapidly absorbed by the glandular processes. As these processes project obliquely backward, Professor Moseley thinks it probable that they help to catch the fish and prevent them from escaping, in somewhat the same manner as the barbs of a hook or arrow or as the backward pointing twigs of an eel-buck would do. Each fresh struggle and plunge must make the fish get deeper and deeper entangled in the trap, because the processes, catching in his gill or gill slits, prevent him from moving backward, and compel him to move forward only.

One word as to the evolutionary history of this singular water-weed. It is a close relation of the beautiful pale green butterwort,

whose graceful purple-blue blossoms are found on almost every bog or hilly brookside along the whole western side of our islands. Butterwort is itself an insectivorous plant, as are all its congeners; and *Utricularia* is only a butterwort which has taken to live in the water, and has so far adapted itself to its new conditions as to eat fish as well as insects. By descent the butterworts are probably members of the primrose family, specialized for inhabiting marshy spots; while the *Utricularia* is a butterwort which has further adapted itself wholly to aquatic life in dirty ditches. —Ex.

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#### A CHEMICAL LESSON FOR THE LADIES.

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A celebrated Parisian belle, who had acquired the habit of white-washing herself, so to speak, from the soles of her feet to the roots of her hair with chemically prepared cosmetics, one day took a medicated bath; and, on emerging from it, she was horrified to find herself as black as an Ethiopian. The transformation was complete, not a vestige of the "supreme Caucasian race" was left. Her physician was sent for in alarm and haste. On his arrival he laughed immoderately, and said. "Madame, you are not ill: you are a chemical product. You are no longer a woman, but a *sulphide*. It is not now a question of medicinal treatment, but of simple chemical reaction. I shall subject you to a bath of sulphuric acid diluted with water. The acid will have the honor of combining with you: it will take up the sulphur, the metal will produce a *sulphate*, and we shall find as a *precipitate* a very pretty woman." The good-natured physician went through with his reaction, and the belle was restored to her membership with the white race. Young ladies who are ambitious of snowy complexions should remember this, and be careful what powders and cosmetics they use—if they use any at all.



*INTELLIGENCE OF TORTOISES.*

Anecdotes in the *Revue Scientifique* appear to show that these creatures must be credited with a considerable amount of intelligence. M. Boucard writes of one which lived in his garden, and when called aloud by its name, "Laideron," would immediately run towards the voice with all the speed a tortoise can muster. The *Testudo mauritanica* of M. Boisse showed even more intelligence, —learned to come when called by a hissing sound, followed its master like a little dog, relished caresses bestowed on its head and neck, gave gentle bites to show its affection, and would climb upon its master's boots, or pull at his clothes, to draw his attention.—*Popular Science News.*

**Editorial Corner.**

Owing to pressure of other duties we are not able at present to devote to the MONTHLY the amount of attention and labor necessary to an increase in size to 32 pages, as we hoped we should be able to do. We will however do our best to make our little journal as interesting and valuable as possible in its present form, and entertain the hope that with an increased subscription list and a little more leisure on our own part, we shall be able to make the enlargement as well as other desired improvements.

The subscription to the MONTHLY is now only 50 cents a year. A number of subscribers have sent in one dollar each to pay for a year's subscription. We will either return the extra 50 cents, send postpaid anything on our mineral catalogue at a reduction of 10 per cent. in price to the amount, or apply the same to continuation of subscription. The latter will be done unless we receive instructions to the contrary from those interested.

Our readers will kindly remember that original notes or more elaborate articles, suitable for our columns, are always gladly received.

## NOTES AND COMMENTS.

R. S. Haliburton gives as the origin of the name Bay of Fundy, the Portuguese "*Baya Funda*" deep bay, and of Cape Race, *Cabo Raso*, bare cape.

The true source of the Mississippi was found by Captain Gladier to be in a lake in lat. 47d. 13m. 25s., and situated three feet above Itasca. The source of the river is therefore 1578 feet above the Atlantic, and its length 3184 miles approximately.

The French have the command of the Niger from Bourre to Boussa, some 700 leagues of water course. From the north of Africa a French railway runs from Arzen to Mecherra, and in a few years will be extended to Imsalah, which is already connected with Timbuctoo by Caravan routes. The French will certainly also push from Porto Novo on the Gulf of Guinea to Boussa on the Niger, and thus complete their communication between the Mediterranean and the Gulf of Guinea.

The Official Gazette of India reports that the number of persons killed by wild beasts and snakes in 1883 was 22,905, that is 780 more than in 1882. Deaths from poisonous animals 20,057. From tigers, 985; Wolves, 287; Leopards, 217. Loss of cattle 47,478, 771 more than 1882; only 1644 cattle were killed by poisonous animals. 19,890 dangerous animals were killed during the year. The animals are victorious by a large majority. Canada is a Paradise compared with India.

*The Journal d'Hygiene* publishes a comparative table of the probabilities of life for moderate drinkers and total abstainers. According to this the expectation of life of a moderate drinker at twenty is 15.6 years; at thirty is 13; at forty 11.6; at fifty, 10.8; at sixty, 8.9, of a total abstainer, at twenty, 44.5; at thirty, 36.5; at forty, 28.8; at fifty, 21.25; and at sixty, 15.285.

## Literary Notices.

The first *Bulletin of the Brookville (Ind) Society of Natural History* is to hand. The true object of such a report seems to be reached in the little volume before us, that of giving to the scientific world in a readable form, the result of original research in local natural history, geology, etc. Extended descriptions of local fauna and flora are here given

We are receipt of the *Proceedings of the Newport (R. I.) Natural History Society* for 1884-5. This volume contains a number of papers of more than usual interest and go to show that the society is doing much valuable work. The Geology of the mouth of Narraganset Bay" by S. Nelson Dale, "Evidences of glaciation on Mount Kearsarge, N. H. by Bayard S. Putnam, and "Natural Plants of R. I." are but a few of the interesting papers in the report before us.

*The Museum* is a late addition to popular science periodical literature. It is designed for all classes of collectors, and the several departments of science receive considerable attention, archæology, perhaps having the preference. The journal is under the editorial management of the well known scientist, E.A. Barber A. M. We wish it a brilliant future.

Published at Philadelphia, 20 pages, monthly \$1.50 per annum.

Latest number of the *Transactions of the Nova Scotian Institute of Natural Science*, Halifax, received. The papers show that some of the members at least are enthusiastic in their research and devoted to the interests of the society. Following is the list of articles appearing in this number:

Notes on the Debert Coal field, Colchester, N. S. By EDWIN GILPIN, JR., *Inspector of Mines*

Notes on the Manganese Ores of Loch Lomond. By the same.

Notes on Peculiar Auroræ. By Prof J. G. MCGREGOR, D.Sc.

On the Northern Limit of Wild Grape Vines. By Prof. GEORGE LAWSON, Ph.D., L. L. D.

Sable Island (continued) By S. D. Mc DONALD, F. G. S.

Glacial Action, at Rinouski, Canada, and Loch Eck, Argyleshire Scotland. By Rev. D. HONEYMAN, D. C. L.

Notes of a Polariscopic and Microscopic Examination of Crystalline Rocks of Nova Scotia and Cape Breton. By the same.

Some Physival Features of Nova Scotia with notes on Glacial Action. By M. MURPHY, C.E., *Prov. Gov. Engineer.*

Notes on Nova Scotia Fresh-water Sponges. \*A. H. MCKAY, B.A., B.Sc.

Report of WM. GOSSIP, ESQ., *Delegate to the Royal Society of Canada, May, 1883.*

Glacial Distribution in Canada. By Rev. D. HONEYMAN, D. C. L.

# “THE AUK”

(Organ of the American Ornithologist's Union)

THE AUK, now entering on its second volume, while thoroughly scientific, aims at popularizing Ornithology, and its pages are open to the Field Ornithologist and Amateur as well as to the Scientist. Volume of contained contributions from nearly sixty of the best known Ornithologists of the United States and Canada. Its present tendency is toward a less technical character than it presented in its earlier numbers, with a larger proportion of more or less popular articles. As heretofore, the REVIEWS of current ornithological literature, and the department of GENERAL NOTES, CORRESPONDENCE, and NOTES and NEWS, will form a prominent feature of the magazine. In the department of RECENT LITERATURE notice will be given of all papers relating especially to North American Ornithology; *wherever published*, as well as a list of all monographic and general works. THE AUK thus covers the whole field of Ornithology in a way to make the magazine indispensable to all who desire to keep pace with the subject, and especially with the current literature of North American Ornithology. The magazine is issued quarterly, the numbers averaging about 100 pages each.

THE AUK is published under the editorship of Mr. J. A. Allen, with the assistance of Dr. Elliott Coues, Mr. Robert Ridgway, Mr. William Brewster and Mr. Montague Chamberlain.

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All articles and communications intended for publication, and all books and publications for notice, should be sent to J. A. ALLEN, Cambridge, Mass.

THE American nation has a double birth-right—liberty and land. Its liberty it has guarded jealously, but in its very recent years it seems to have been indifferent to the loss of its landed estate and ignorant of the methods by which it has been diminished. A veteran legislator, the Hon. George W. Julian, who has given special attention to the acts disposing of our public lands, tells the story in brief in a contribution to the "North American Review" for August. In the same number five medical authorities discuss the question, "Can Cholera be Averted?" Felix L. Oswald contributes a suggestive article on "the Animal Soul"; and the Rev. M. J. Savage, in "A Profane View of the Sanotum," brings an indictment against the daily press. The other articles are one on "The Price of Gas," by Charles H. Botsford, one on "Temperance Reform Statistics," by Prof. W. J. Beecher, and the chapter of "Comments," by various writers, on articles in previous numbers.

## FROM THE PRESIDENT

OF BAYLOR UNIVERSITY.

"Independence, Texas, Sept. 23, 1882.

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Devoted to the interests of Canadian Naturalists and to the encouragement of the more general study of the Natural Sciences.

A. J. PINEO, EDITOR.

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