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A. Sawyer

No. 7.

1885.

July.

THE
CANADIAN SCIENCE
MONTHLY.

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CONTENTS OF THIS NUMBER.

* Notes on the Birds of Manitoba.....	89	Editorial Corner	101
Asphalt	94	Notes and Comments	102
* Cranberry Spouts.....	95	Literary Notices	103
Tests for Tin Ore	97	Exchanges	104
* The Home of the Pitcher Plant.....	99		

* Written for The MONTHLY



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A. J. PINEO, EDITOR.

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KENTVILLE, N. S., JULY, 1885.

No. 7.

NOTES ON THE BIRDS OF MANITOBA.

[From the *Zoologist*. Revised for the MONTHLY.]

DURING the last two years I have several times had occasion to visit that newly-opened but much-talked-of region known as Manitoba; and as on each visit I devoted as much time as I was able to spare from other branches of Natural History to the study of the Ornithology of that country,—a subject to which very little attention has hitherto been directed,—I now propose to offer a few remarks upon it. It must, however, be clearly understood that my observations are put forward strictly as *notes*. Many, even of the commonest birds, are not so much as referred to herein, simply because they did not happen to come specially under my notice. Most of the following notes were made near the town of Carberry, 105 miles west of Winnipeg, during the months of August, September, and October, 1883. I cannot too fully acknowledge the assistance given by my friend Mr. E. E. T. Seton, of Toronto, who for several years past has resided in Manitoba, and has done much towards investigating its avifauna. The nomenclature used is that employed in the new edition of Dr. Coues' 'Key to North American Birds.'

The popular idea of Manitoba as an icy and inhospitable country is not altogether wrong, so far as winter is concerned; but of the summer season it is wholly incorrect. While the latter lasts, bird-life in the greatest variety everywhere abounds. Meadow Larks, 'Quailies,' Prairie Chickens, Bay-wings, and a hundred other kinds breed on the open prairies, Hawks, King-birds, and Nightjars swarm in the "bluffs" and woods; wild-fowl in the "sleughs."*

* On the Manitoban prairies an isolated cluster of trees or a copse is known as a "bluff," a "sleugh" is the invariable name for a wet, marshy spot or a shallow pond.

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Early spring and late autumn see a vast army of migrants on the move; whilst, even in winter, Hawk Owls, Snowy Owls, Shore-Larks, Snow Buntings, Crossbills, Pine Grosbeaks, several Woodpeckers, "Chickadees," Grouse, Shrikes, &c., enliven the somewhat dreary scene.

It will be well to say something of the haunts of the birds spoken of in the following paragraphs. Carberry stands at the south end of what is known as the "Big Plain," which is merely a rather unusually large stretch of unbroken prairie. South of the town, and extending almost to the Assiniboine River, lies an extensive range of desolate sand-hills, which are seldom invaded by the foot of man, and are likely long to remain in their primitive condition; they consist merely of wind-formed dunes, with hollows between which are filled with water, and form the home of many a rare bird and mammal. The sand of which the hills are formed is so pure that it can only support a very scanty covering of grass; and it is to this circumstance that we are indebted for the fact that the sand-hills, unlike the prairies, support a fairly abundant growth of trees, such as spruce, poplar and oak. Were the grass sufficiently long and dense to "carry fire," the trees would be quickly killed and burned to logs. Mr. Seton has just succeeded, after a long and exciting hunt, in killing a Moose in one of the woods on the sand-hills. Through the centre of the range of sand-hills runs Pine Creek, a sluggish stream clogged with water-lilies, and fringed with willows and bulrushes. For several miles on either side of the creek extends a huge swamp, covered thickly with trees of spruce and tamarac, where the Indian pitcher-plant, *Sarracenia purca*, grows by the acre, and all things combine to make a true naturalist's paradise. In winter, when everything is frozen hard, this swamp may be crossed with ease; but so wet and impenetrable is it in summer, that I have little hesitation in claiming that no one except Mr. Seton and myself have ever crossed it at that time of year. Of the prairies not much need be said; they are flat, covered with a fine growth of grass, and interposed with bluffs, which are gradually disappearing before the hungry fire. If prairie-fires had been by some means arrested fifty years since, Manitoba would to-day have been a densely-wooded, instead of a prairie, country. The fire, too, annually destroys the young trees that spring up. In

the moister parts, where lakes and ponds arrest the progress of the fires, extensive woods of poplar are found, in which many woodland birds are able to find a home, even though Manitoba is essentially a prairie country. Of the excessive fertility of the prairie soil there is no question.

The American Robin, *Turdus migratorius*, is a common bird among the trees on the sand-hills and in the bluffs, where it also breeds.

An almost equally common species in similar situations, and in the willow-clumps on the prairies, is the Cat-bird, *Mimus carolinensis*. It is a bird not easily overlooked, for on entering any dense copse one is almost certain to have several peering through the foliage and incessantly uttering their loud, harsh, and extremely cat-like mew, especially if the nest be near at hand. It approaches very close, and is easy to shoot. I found it breeding in a fringe of willows beside the creek which intersects the dry, treeless prairie round Moose Jaw, 398 miles west of Winnipeg.

The Long-tailed Chickadee, *Parus atricapillus septentrionalis*, is the only Tit I remember observing. I shot the first specimen on September 14; two days later a pair entered a room in which I was sitting, and I captured them. The "Chickadee-dee-dee" of this species is unmistakable.

Sitta carolinensis was not an abundant species, but I brought home one specimen.

On one occasion I was told that a Wren, *Troglodytes aedon*, had built its nest in the pocket of a coat hung on the door of a ferryman's house on the Souris River.

The Shore Lark, *Eremophila alpestris*, is a common species, breeding on the prairie throughout Manitoba, probably raising more than one brood in the course of the year.

The eggs and nest of the Connecticut Warbler, *Opornis agilis*, taken by Mr. Seton in the extensive tamarac swamp south of Carberry, are now in the Smithsonian Institution. They are, I believe, the first that have been taken.

The Swallow-tribe seems to be usually scarce in Manitoba; but farther west, as far as the Saskatchewan, one species *Petrochelidon lunifrons* is abundant; and breeds round all the water-tanks and under

many of the bridges along the railway. As three years ago this region, through which the line now runs, was practically uninhabited, and the Swallows consequently could hardly have then found suitable nesting-places, it seems probable that the range of the species has been considerably extended in that time—an instance, doubtless, of the rapidity with which some species follow man as he extends the area of civilization.

At least one species of Shrike, *Lanius ludovicianus excubitorides*, is common and breeds, building its nest largely of the stalks of a species of *Gnaphalium* in the branches of the low, scrubby oaks that cover the sand-hills.

The little Goldfinch, *Astragalinus tristis*, is fairly common on the edges of the bluffs.

The little Baywing, *Poæcetes gramineus*, is one of the most familiar of prairie birds, and nightly sings a subdued kind of vespersong as the sun goes down. Its most notable peculiarity, however, is its habit of flitting along a trail or pathway in front of an advancing wagon or person, alighting every few yards. As it is but comparatively recently that there have been any human trails over the prairies, it seems probable that this proceeding is a relic of a habit acquired by the bird of flitting before the buffaloes along the paths made by those animals.

About the second week in September the slatey Snowbirds or Juncos, *Junco hyemalis*, began to become abundant, and remained so for at least a month.

The Bobolink, *Dolichonyx oryzivorus*, is of course common. I saw birds in both the black and buff plumage together near Carberry on August 30th.

The Red-winged Blackbird, *Agelæus phæniceus*, is very abundant, and breeds in the rushes round most of the lakes, afterwards collecting into flocks.

The gorgeous Baltimore Oriole, *Icterus galbula*, is far from rare, and its hanging nest is often to be found in the poplar trees growing on the sand-hills.

No bird is more characteristic of the prairies than the Meadow Lark, *Sturnella neglecta*. It is very common in summer, and breeds abundantly. Its clear, musical whistle (almost, if not quite,

equal to the song of the Nightingale) is uttered by the bird either when upon the wing, the ground, or a tree, and may be heard for a great distance. Towards the end of August, though the birds had not left, they had largely ceased whistling; but the arrival of a few warm days, about the 10th of September, set them off again for a time. When I left, about the middle of October, there were still a few small parties about, though the great majority had gone south. In the previous year (1882) Mr Seton says the main body left about the 17th of October. It is decidedly a shy bird, even in a country where most birds are notably less wary than in England; and, common as the bird is, it is no easy matter to obtain a specimen just when one wants. As Mr. Seton remarked to me, it bears truly heraldic markings on its breast—*or, a chevron sable*. Late in July I shot a young specimen with a large festering sore upon its breast, doubtless caused by its having accidentally flown against a spike on one of the numerous "barb-wire" fences on which this bird frequently perches. Not long after, I shot a Purple Grackle with an old wound on its head, which was probably occasioned by the same means. I often thought what a capital thing it would be to introduce the Western Meadow Lark into England. So far as plumage and song are concerned, it would take rank among our brightest-colored and most admired songsters; while its hardy nature would allow of its remaining with us the whole year round, as indeed it often does in Ontario and other districts farther south than Manitoba. Perfectly harmless and accustomed to grassy countries, it would find an abundance of insect-food, and would doubtless soon increase sufficiently in numbers to serve, if need be, as a game and food-bird, as it largely does in the United States. No other songster that I ever heard equals this bird in the sweetness and mellowness of its notes.

Three species of Grackle, the Purple, *Quiscalus purpureus* and the Rusty, *Scolecophagus ferrugineus*, and Brewer's, *S. cyanocephalus*, are excessively abundant, and often collect into enormous flocks after breeding-season. Under the name of "Blackbirds" they share in common the curses of the settlers, on account of the great damage they do in the harvest-field. They are both very noisy birds.

Before the beginning of September the Crow, *Corvus frugivorus*,

did not seem to be particularly common; but after that it became more noticeable. Large flocks frequently flew over, their low hoarse croak being audible for long distances over the prairie. On September 7th a specimen was brought in having a curious malformation of the bill, which was evidently due to a gun-shot, as the right humerus had also been broken. The upper mandible was bent a good deal to the left, as well as having the tip strongly turned downwards. A notch had been worn in the side of the lower mandible where the upper one crossed it, but the former was normal in all other respects. As the bird was only wounded slightly in the wing, we kept him alive in order to learn how, with such an awkward instrument for a bill, he contrived to take his meals; for the fine condition he was in clearly showed that he had some means of so doing; and in a few hours he was tame enough to show us how. We placed some pieces of bread upon the floor which, being hard and flat, probably puzzled the bird more than if it had been soft or uneven; but, by standing directly over them and putting down his head till it was almost between his legs and the crown nearly on the floor, he contrived to get the piece of bread between his mandibles.

The Whiskey Jack, *Perisoreus canadensis*, probably breeds in the dense tamarac swamp south of Carberry, as a young specimen was shot there by Mr. Seton in August.

The Blue Jay, *Cyanocitta cristata*, is common, but appears to be migratory,—partially at least,—leaving in winter, though resident farther south.

(To be continued.)

ROBERT MILLER CHRISTY.

ASPHALT.

In about the centre of the island of Trinidad, a dot in the Caribbean Sea, just off the coast of Venezuela, there is an asphalt lake. It is said to cover about one hundred acres and is apparently inexhaustible. It is a black sandy substance, and is believed to be crude rotten petroleum. A singular feature of the substance is that, although about fifty thousand tons are taken out of this lake annually, it constantly fills up so that there is no lessening of the supply. This singular lake of paving material is owned by the Venezuelan government, but leased to a company in Washington.—*Philadelphia Times*.

CRANBERRY SPORTS.

In the rear of the great sand dunes at Cavendish, P. E. Island, are a couple of glassy ponds bordered round by a profusion of marsh and water plants. It is just a spot where the lover of nature may lose himself for an hour in the charm of her fresh beauties. The lofty dunes clothed to their summits with the purple blossoms of the sea pea, *Pisum maritimum*, and the white spikes of *Psamma arenaria*, whose long woven roots preserve the sands from drifting.

The fields of irises of deeper azure than the bowing summer sky, thickets of Carolina roses gorgeous with bloom, pink bells of convolvuluses, bright potentillas, callas, calthas, convellarias, and waving veils of silky grasses spread round the sunlit ripple of the ponds.

To vary the scene we have but to mount the summit of the dunes, where the Gulf rollers are booming at our feet and the vast blue spreads before us. The white winged terns sweep by, the herring gull flaps heavily at its toil on the deep. The weird cry of the loon echoes along the shore, and the plaintive whistle of the guillemot and the wail of the sandpiper mingle with the ceaseless sound of waters. Like a glory the summer sky bows over the gleaming sea, the grey rolling dunes, the far red headlands, and the foaming shores; while the deep thunder rolls on, like the voice of eternity everywhere heard amid the harmonies of nature.

On the border of one of the ponds which we have mentioned, where its silver spreads nearest the shadowed feet of the dunes, there is a small area covered with plants of the cranberry, *Oxycoccus macrocarpus*. While passing over this on July 4th, I observed what appeared to be a number of large pink blossoms among the vines. On closer examination they proved not to be blossoms but shoots of curiously modified leaves occurring at intervals on the trailing stems. These modified shoots were about $\frac{3}{4}$ inch in length bearing seven or eight obovate slightly petiolate, alternate leaves of a pink color and a delicate petaloid structure and appearance. The prominent midrib of the ordinary leaves was gone and its place taken by an obscure midrib divided into branching veins. The shoots were not by any means floral organs but sprigs of leaves of a petaloid structure.

What struck me as peculiar was that the modification had not been in part. These were not leaves with a floral tinge, nor leaves with a floral tex-

ture, but the whole perfect petaloid structure was produced complete, evidently by the operation of a law whose function it was to produce a perfect organic structure of this class.

This is an important lesson in the modification of plant structure. It is not accomplished by random efforts or the fortuitous multiplication of parts, but under the direction of established organic laws. We frequently see variations in form among the leaves of plants. It is very observable on the common raspberry, *Rubus strigosus*. But these variations are always a modification of the general plan of structure on which the leaves of the plant are formed. It is variation according to law.

When flowers run into varieties under cultivation the more showy blossoms are not an abnormal structure, but every new petal is formed strictly on the plan of the original variety.

In higher life, too, the same rule holds. Varieties in the color of the plumage of fowls for example, is not a fortuitous combination of colors, but an arrangement after the general laws of the adornment of avarial plumage.

This is the important point of all variation of species. It is according to law, the subject of order and rule, and hence under the direction of the Divine Lawgiver. Much is made of the law of the survival of the fittest among a certain class of scientists, but the *production* of the fittest to survive is of vastly more importance to the world, and as this appears to be guided by Heaven established laws, there is little left to the wild arbitrament of fortune and of chance.

F. BAIN.

“There is a tongue in every leaf
A voice in every rill—
A voice that speaketh everywhere,
In flood and fire, through earth and air;
A tongue that’s never still—”

TESTS FOR TIN ORE.

The following interesting description of tin ore is from the last annual report of Mr. Henry G. Hanks, the State mineralogist of California :

Cassiterite is derived from the Greek for "tin." This mineral is the binoxide of tin, Sn O_2 , atomic weight 74; its composition is, tin 78.67 and oxygen 21.33 per cent. It is found in nature both crystalline and amorphous; in the former state it occurs in veins intersecting granite, gneiss, mica schist, porphyry and other rocks. In the latter condition it is found in rounded nodules or grains, from several pounds in weight to the finest black or brown sand. This is called stream tin because it is found in placers, like gold, in the beds of streams into which it has been washed by the action of water, resulting, like placer gold, from the disintegration of rocks which contained it in veins, its great specific gravity (6.4 to 7.1) causing it to resist the force of the water which has washed away lighter minerals. Stream tin is found of various colors and texture, being black, brown, drab or nearly white; perfectly compact and amorphous, laminated, mammillary, or botryoidal, with elevated points (toad's eye tin), fibrous (wood tin), concentric, radiated, &c.; hardness, 6 to 7; luster, adamantine when crystallized; stream tin dull, nearly transparent or opaque. Tin is also found in nature as a sulphide, but is comparatively rare. It has been found also in meteoric stones.

Cassiterite is easily reduced to the metallic state in a crucible with soda and anthracite coal dust (culm) or cyanide of potassium. The crucible should be allowed to cool, and then be broken to remove the button of tin; for this operation a hot fire is required. Before the blow-pipe on charcoal it is easily reduced if the following plan is adopted: The ore supposed to contain tin should be pulverized and passed through a 40 to 60 mesh sieve, the resulting powder washed in a pan or horn spoon to a small quantity, the prospect dried and ground in an agate mortar with twice its bulk of carbonate of soda. This mixture is transferred to a cavity in a piece of charcoal, and heated in the reducing or inner blow-pipe flame until the assay assumes a spherical form; more is added until it is obtained half the size of a pea; a small piece of cyanide of

potassium of about equal size is then placed with it, and both strongly heated in the reducing flame; globules of tin will immediately appear if the metal was present in the ore, which by a little skillful manipulation may be made to coalesce into one, or the assay may be cut out of the charcoal with a knife, and ground with water in an agate mortar, when the beads will flatten into small disks under the pestle, and may be separated by washing.

To be sure that the metal is really tin, the following experiment may be made: Place the bead on clean charcoal without fluxes, and heat first in the reducing and then in the oxidizing flame. If tin it will lose its metallic character and become a white oxide, which it will be found very difficult to reduce again to metallic globule. This may be effected by the addition of a small piece of cyanide of potassium. Observe that no distinct coating is formed on the charcoal, which would be the case if the metal were lead; remove the bead to a small anvil and strike it with a hammer until flattened out (antimony and bismuth are brittle). The button boiled in a test tube with nitric acid does not dissolve, but is changed into a white insoluble powder.

Antimony gives a similar reaction, but is brittle and on charcoal would have burned and given off thick white fumes of oxide of antimony. These tests will serve to distinguish tin from other metals which it resembles, but another still more characteristic test may be made, as follows: Reduce the bead of tin from the ore by the method above described, hammer it out very thin, place it in a clean test tube and pour hydrochloric acid over it; action takes place and the metal dissolves. Before solution is complete (a portion of the metal remaining undissolved) pour a few drops of the solution into a vessel containing a dilute solution of perchloride of gold; a purple color will be produced which leaves no doubt that the metal is really tin. These tests are described with considerable attention to detail, because tin is liable to be found in new localities, and it is desirable to furnish the prospector with information by which he can test the ores he may find supposed to contain tin. It is very important to concentrate a considerable quantity of the ore as described, for experience has shown that tin may exist in small quantities in minerals and ores not indicated by the appearance.

Great care should be observed in the use of cyanide of potassium, which is a deadly poison.

Metallic tin is prepared by crushing the ores and concentrating the tin mineral (black tin), roasting to drive off arsenic, sulphur, etc., and fusion in contact with charcoal or with a flux of lime. It is purified by fusion at a low temperature, at which the tin flows, leaving impurities behind. The impurities are arsenic, antimony, bismuth, zinc, titanium and copper. Tin is obtained pure in the laboratory by oxidizing with excess of nitric acid and washing with binoxide so obtained, first with water, and lastly with hydrochloric acid, and afterward fusing in a closed charcoal-lined crucible.

Tin so obtained is nearly chemically pure. The specific gravity of pure tin is 7.178. It is softer than gold, harder than lead, it crackles when bent, and has a peculiar odor when warm. It has but little ductility, but considerable malleability, which is increased when the temperature is raised to 220°. It fuses at 442° F. It is distinguished from other metals by the following properties and chemical relations: It is white, malleable, easily fusible, is reduced to a white oxide by the action of nitric acid, and turns black in a solution of perchloride of gold, with excess of hydrochloric acid, without giving off gas.

THE HOME OF THE PITCHER PLANT.

This curious and interesting plant which is found in tamarack swamps from Labrador to the Rocky mountains, is still unknown to the majority of people, few save the lover of nature in her wildest, which to the botanist is her loveliest state, having ever seen it in its native home.

In cold damp bogs, almost hidden by wild grass, or beneath the sombre shade of the feathery tamarack, the Pitcher Plant (*Sarracenia Purpurea* L.) makes its home.

Leaving Sarnia July 7th in company with my friend Mr. S—— we walked across the sand plains to Lake Huron, where, after partaking of dinner, and gathering a number of flowers, not in my herbarium, we started for the swamp where we found the Pitcher Plant and some members of the Orchis family, which are generally found in the same locality, in bloom.

We are told by Gray that this strange plant was named by Tour-

nefort, in honor of Dr. Sarrazin of Quebec, who was the first to send the plant and an account of it to Europe.

We were rather late to get the flower in full bloom as the petals had mostly fallen. The flower is two inches across; sepals five, green and purple, persistent; petals five, deciduous, somewhat fiddle shaped arching over the style, which expands into a five pointed shield covering the ovary, the five points terminating in curious hooked and pointed stigmas; scape naked, fifteen inches high, bearing a single flower. The hollow, trumpet shaped leaves were filled with water, which was cool and refreshing. Many of the leaves had quite a number of drowned insects in them, the recurved hood at the apex of the leaves, being covered on the inside with sharp pointed bristles pointing downwards, which insects cannot crawl over, so that once they fall into the leaves they are prisoners.

The showy Lady's Slipper (*Cypripedium spectabile*) we found here in full bloom, and a handsomer flower it would be difficult to find. To adequately describe its beauties is impossible, it must be seen to be appreciated. It grows very well, I am told, in cultivation.

The *Calopogon pulchellus* which with the Lady's Slipper belongs to the Orchis family, is another lovely plant. We found it in small quantities and took home some roots to try it in the garden. I am experimenting with the Pitcher Plants in a pot in a larger vessel holding water, which I find keeps the roots in about the same degree of moisture to which they are accustomed in their native home. I secured a score or more new flowers for my herbarium and after a fourteen mile walk arrived home somewhat tired physically, but mentally refreshed.

I cannot help thinking that if some half sick dyspeptics, would throw the doctors' drugs out of the window, exchange their patent leather shoes for coarse ones, and take long walks through wood, field and swamp, they would gain health and also a knowledge of things as curious as foreign lands possess.

JOHN MORRISON Jr.

Oban, Ont.

Editorial Corner.

From a book lately reprinted from the century—"The Cruise of the 'Alice May'—" we learn that Arichat, Cape Breton, has a breed of dogs peculiar to itself. The Author says "They are like Newfoundland dogs, large, black and shaggy, but some fate has robbed them of their tails, leaving only a shortish stump." The *American Naturalist* expresses the wish that the number of generations it has been in existence should be ascertained. This is a chance for the naturalists of Cape Breton, and we hope to hear from them.

Will our Naturalist friends and readers everywhere kindly lend us their assistance in our efforts to furnish an interesting and instructive periodical devoted to Natural History. Especially do we desire the co-operation of all Canadian Naturalists to the end that the MONTHLY may be a truly national and representative journal. Send in your contributions to our columns, please.

Dr. R. W. Shufeldt of the U. S. Army sends to the *New York Medical Journal* an illustrated description of a curious case that came under his observation, that of a double uvula in a young man. Each one of the pair was as large as the single one usually is, and seemed to be capable of contraction, independent of its mate.

Prof. Huxley is about to retire from his duties in the South Kensington Museum. He is afflicted with nervous prostration brought on by over-work. Should the rest which he is about to take not be followed by an improved state of health, he will retire from the presidency of the Royal Society on November next.

Persons receiving sample copies of this number of the MONTHLY are respectfully invited to become subscribers. This they can do by sending in the small sum of 50 cents.

Show the MONTHLY to your friends and ask them to help along the work by sending in their subscriptions.

NOTES AND COMMENTS.

Botany.

Principal Lay of the Amherst Academy, Cumberland, N. S., is doing good practical work in Botany with his students.

Dr. Koch, the celebrated German bacteriologist, has been appointed professor in the University of Berlin.

The following species of plants have been reported. *Andromeda polifolia* in Shelburne Co., N. S., Rev. Jas. Rossborough; *Asclepias incarnata* at Grand Lake, N. S., *Sagittaria graminea*, *Brasenia peltate* and *Myriophyllum tenellum* at Dartmouth Lakes, Halifax Co., N. S., by MacKay.

The minimum of botanical work fixed by the Educational Association of Nova Scotia for the first term's work in the Academic course of study, is the complete history, analysis and classification of 50 species common to every section of the province, with the characters of the *genera* and *orders* to which they belong.

Mineralogy.

Platinum has been discovered in Alder gulch, Montana.

New discoveries of Antimony ores are being made in Hants Co., N.S.

In places in Wyoming there are deposits of pure soda from ten to fifteen feet thick.

The total amount of mica mined in the United States in 1882 is said, on good authority, to be about 65,000 pounds, valued at \$250,000.

A region containing unlimited deposits of native sulphur has been discovered in the Yellowstone Park. Heretofore it has been obtained only in Greenland.

Entomology

The Forest Tent Caterpillar has not yet reappeared in the north of the province, since its sudden and unexplained extinction two years ago.

The Colorado Beetle is still spreading in Nova Scotia, although it has not been allowed to increase to a very destructive extent. A vigilant and continuous system of checking them may repress their ravages.

Zoology

The common Star Fish and common Sea-urchin or Sea-egg can be had in unlimited abundance by dropping into a boat by a wharf in Halifax, N. S., and fishing them up from the wharf sides, &c., by means of a scoop net or an oar.

An Aleyonelloid form of *Plumatella*, species not known, has been discovered growing on submerged branches in the Cemetery Pond, Pictou. It is an interesting form of Bryozoan life.

A very large specimen of the Brown Pelican has been shot at Cape John, Pictou Co., N. S.; it has been purchased and mounted for the Pictou Academy Museum. Between 20 and 30 birds and mammals have already this season been mounted for this institution.

Geology

M. M. Renault and Zeiller have described a number of mosses from the Carboniferous strata of Commeny, France. The mosses previously found have been few, and of the Tertiary Epoch.

The island of Cape Breton, Nova Scotia, has been thoroughly explored by members of the Geological Survey of the Dominion of Canada, and excellent series of geological maps of the same have been published.

Sir Wm. Dawson in a memoir read before the Royal Society of Canada in May last refers to a remarkable Jurassic-cretaceous flora recently discovered by Dr. G. M. Dawson in the Rocky Mountains, and to intermediate groups of plants between this and the Middle Cretaceous.

The dragon flies of the Middle Devonian of New Brunswick were thought to be the oldest land animals until Mr. Peach of Scotland showed that chilognaous myriapods were far from uncommon in the lower Old Red Sandstone of Forfershire. There is but a short step from this to the Silurian and M. Brogniart has found in the Silurian limestone of Calvados a fossil Blatta.

Art and Manufacture

The chimney of a manufactory in Breslau, about fifty feet high, is made of pressed paper, a substance, it is remarked, which has almost perfect powers of resistance to fires.

In Jaffa, Palestine, there are 500 gardens, of which 150 are ranked first class, all the gardens together containing 800,000 trees. These are placed 15 feet apart, are watered every week in summer, at a cost of one fifth the value of the crop in gardens of the first class.

ALASKA.

[Lieut. Schwatka.]

The Yukon river in Alaska is so long that if its source were at Salt Lake it might empty into New York Bay, and its mouth is so wide that New York would be on one side and Philadelphia on the other. Alaska has a coast line greater than that of all the rest of the United States, adding together the Atlantic, Gulf and Pacific seaboard.

Literary Notices.

The *American Naturalist* for July contains the following original articles: I. "Evolution in the Vegetable Kingdom", *Lester F. Ward*. II. "On the Vertical Range of certain Fossil Species in Pennsylvania and New York", *E. W. Claypole*. III. "Ancient Rock inscriptions on the Lake of the Woods", *A. C. Lawson*. IV. "Kitchen Garden Esculents of American Origin, No. III", *E. Lewis Sturtevant*. V. "Mourning and War Customs of the Kansas." *J. Owen Dorsey*. VI. "The relations of Mind and Matter (continued)." *Charles Morris*. A suggestive editorial concludes with these paragraphs:

"What are the facilities in the United States for sustaining a class of original investigators; a class whom many praise, but whom few think of as requiring unencumbered time for their work? In spite of the fact that this land was settled by idealists and thinkers in their way, we are behind the old world in the means and methods of making a life of scientific work even respectable. Professorships are mostly encumbered with work. Positions for pure research are very few. Of prizes, honorary and financial, we have scarcely any. The positions in the gift of our societies are nearly all obtained by political methods only, to which the true student is of necessity a stranger.

If there be no opportunities or rewards for the Scientific Specialist in this country, we will have to look abroad for the stimulus to thought, and for a sentiment to offset universal sordidness."

No *Naturalist* can afford to be without this monthly.

Exchanges.

Mr. A Delugin, pharmacien, Blois, noir et Cher, France, desires North American coleoptera (genus *Donacia*.) He offers in exchange numerous coleoptera from France. Also a collection of the *Donacia* of France.

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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.

TERMS: \$5 a year, including postage, strictly in advance. Single numbers, 75 cents. Free to foreign members, and to active members not in arrears for dues.

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