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ACADIAN SCIENTIST.

Published in the Interests of the Acadian Science Club.

A. J. PINEO, EDITOR.

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The Acadian Scientist,

Woolville, N. S.


The Acadian Scientist.

Published in the Interests of the Acadian Science Club.

VOL. I.

WOLFVILLE, N. S., APRIL, 1883.

No. IV.

 The subscription price is only thirty-five cents a year. Canadian or United States Stamps taken; denominations of 1 cent or 3 cents preferred.

OWING to the increased cost of publishing the SCIENTIST in its present form we have been obliged to make a slight advance in the subscription price. We leave our readers to judge whether or not the change is worth the additional *ten cents*. It is our aim to make our little magazine the cheapest of its kind in America, and that not for the purpose of rivaling the many other excellent scientific periodicals, but in order that it may be read by all to whom it would be of interest and value.

Be it understood that our chief object, in harmony with that of the *Acadian Science Club*, is to urge and assist to a larger and more general study of Nature, believing that the works of a beneficent Creator, as they are spread around us in marvellous beauty and profusion, are more worthy of being studied and, when studied, are more conducive to pleasure and mental vigor, than the weak sensational trash that is having such a pernicious influence upon the youth of our time. In our efforts to further this object we respectfully solicit the co-operation of all whose opinions, in this respect, are in accord with our own.

THE publication of the SCIENTIST was at first undertaken somewhat doubtfully, but we are glad to be able to say that the experiment has proved successful. Our subscription list already represents a geographical extent from Nova Scotia to California, and from Texas to British Columbia, and is constantly increasing.

We desire communications of the right sort to our columns. As we wish to make our journal of special value to young collectors, we ask all working Naturalists, to whose notice this may come, to send such notes and articles as would be of interest to those following like pursuits.

Please show the SCIENTIST to your friends; they might become interested in it and its objects and favor us with their subscription.

Read our *New Premium Offer* on 3rd page of cover.

MR. C. I. MORGAN communicates to *Nature* the results of some interesting experiments made by him upon a number of South African scorpions, by which he seems to have disproved the popular belief that this little animal is possessed of suicidal instincts. Though tortured with concentrated sunbeams, circles of fire, burning phosphorus, sulphuric acid, and various other means they showed no inclination to seek their own destruction, though they would invariably move their stings over the irritated spots.

For the Scientist.

AN EXCURSION TO BLOMIDON.

Probably the most of the readers of the SCIENTIST have heard or read of this celebrated promotory. Those who have studied modern text-books on mineralogy have observed the frequent mention of this locality, for it is somewhat famed for the beauty and variety of its mineral wealth, and who has not read Longfellow's master-poem, *Evangeline*, and viewed in imagination the scenes as the poet paints them—the broad and fertile Grand Pre, with its verdant plains separated by only a narrow mound from the waves of the Basin of Minas, and “away to the northward,” across that beautiful sheet of water, Blomidon, crowned with mists from the mighty Atlantic.

But upon the little Acadian village of nearly a century and a half ago, and upon all its surroundings, the iron hand of time has wrought many changes. The “forest primeval” has largely been cleared away to give place to smiling farms with their waving grain fields and fruitful orchards. The Basin of Minas has been forced to abandon still larger portions of its oozy bed from which abundant crops of hay of the first quality are cut and which now, as I write, on this beautiful autumn morning, is dotted with innumerable cattle and horses which roam over it at large. The simple Acadian peasants who were torn from their pleasant farms and forced to make their homes among strangers in a strange land, have been succeeded by a race of sturdy farmers of Saxon descent; but the broad meadows still bear the name given them by their original possessors, and the prosperous farming village of Grand Pre, occupies the site of the old French town. In its vicinity the tourist may observe a number of old cellars and

mounds with ancient fruit-trees and willows standing near, little else, save tradition, remaining to tell us of the Acadians that once lived there.

It was about the middle of a soft clear afternoon in October when a nature-loving friend and myself reached Whitewaters, a small settlement at the foot of the ridge of which Blomidon is the eastern extremity. The skies had taken on an exquisite softness and beauty that reminded one of the Indian summer that would be upon us ere long, and the air was so still that not a leaf rustled on the trees by the wayside as we passed. Everywhere there was a solemn hush as tho' nature had been awed into stillness by the ghost of dead summer as she passed and was filled with a presentiment of coming gloom. Even the little birds had hushed their songs in the wood, and the red squirrels had ceased their chattering and only betraying their presence by a rustling among the dead leaves as prompted by an unerring instinct, the little creatures hurried home with their loads of beech nuts for winter use.

As the carriage road extended no farther than Whitewaters, in the direction of our destination, we left our conveyance and started off on foot first loading ourselves with the equipments and portable larder that we had brought for the occasion, for we were to spend a week camping around the shores of Blomidon. A few minutes brought us to the base of the cliff, which is of Triassic sandstone, known as the New Red. From this point it continues to grow higher and higher as we advance, till it becomes superseded by a deep formation of dark basaltic trap, and finally culminates in the summit of the cape. Until we reach the trap the cliff is a perpendicular wall of sandstone which is so soft that the *debris* which fell in the land-slides of the

preceding spring had long since been broken up and washed out to sea and spread over the bottom of the Basin. Now the waves by daily breaking against its base are again undermining the cliff so that the frosts of winter and the rains of spring may be effective in making another inroad upon this stronghold of nature. For how many centuries has this process gone on! Away back in the grey dawn of geological time, when the primeval seas first beat upon the shores of these new-born hills, the work began, and throughout all the innumerable age that have intervened the same agencies have been at work tearing down, and rebuilding, and transforming the face of nature.

But our camping ground was two miles farther on and as it was necessary for us to reach it in time to complete our camp before night-fall we were obliged to quicken our pace, and only lingered now and again to select a few of the finer and more beautiful specimens of satin spar and selenite. Soon we lost sight of the sandstone, not because it did not still form the base of the cliff, but because it was hidden from view under the many feet of trap rock that had fallen from the cliffs above and formed an abrupt slope. Every spring thousands of tons loosened by the frosts fall in terrible avalanches with a sound that reverberates round the shores of Minas Basin like echoing thunder. Upon these the waves at once commence their work, but owing to the superior hardness of the trap, it is years before even the outlying masses are removed while at the base the *debris* accumulates. The trap here is of two varieties, the hard firm basalt which rises in columnar masses into perpendicular cliffs, and amygdaloid—a rock full of almond-shaped cavities which are often lined with crystals of colorless quartz, or the

beautiful purple amethyst. In our haste we collected a few of these and hurried on to when the slope is less abrupt and a tiny stream, which in spring and during heavy rains swells into a torrent, came tumbling down the mountain-side. Following this stream without much difficulty up the less abrupt slope which is there covered with the "forest primeval" in a thick growth of spruce and fir, till nearly half way to the summit, we reached a small level terrace just large enough for our purpose. It was indeed a romantic little spot, and mingled with our satisfaction, were feelings almost of awe as we took possession of it. For how did we know but that we were desecrating some fairy rendezvous? Perhaps the Oreads of the mountain would assemble there to hold their revels only to find their favorite haunt profaned by two uncouth mortals snoring in the arms of Morpheus. But though experiencing all becoming reverence for such airy creatures of celestial mould we at once set about building the little camp in which we were to spend a few delightful days. As there was an abundance of materials at hand we made rapid progress with our building and finished putting on the covering of brush and moss just as the golden glory of the setting sun was fading from the hills on the opposite side of the Basin. Then as the evening was chilly we soon had a brisk little fire burning in front of the entrance to our camp and seated ourselves beside it to enjoy our evening meal to which, with appetites sharpened by our tramp over the rocky beach, we were thoroughly capable of doing justice.

After satisfying the demands of nature upon our lunch baskets we ascended the mountain side a few yards where a more unobstructed view of the scenery before us could be

obtained, and, seated upon some moss-covered stones gave ourselves up to the enjoyment of the poetry of our situation. It was a glorious night, with not a cloud in the sky, and the full October moon shed her soft mellow radiance over the mountain side and lighted up, with a glory all her own, the rippling waters of the beautiful basin that kissed the bouldered beach below. Among the sounds that greeted our ears were the mournful cadence of the waves of the incoming tide and the joyous music of the tiny stream that sprang into life but a few feet from us and went leaping and dashing down the mountain-side as if dancing in glee over its escape from its dreary prison and hastening to leap into the arms of its placid mother—the beautiful sea. With these were mingled the hooting of an owl from the top of a tree near by, the occasional splash of the wild duck, and the scream of the gull or loon, together with the gentle rustling of the leaves as the evening breezes whispered among the tree-tops, all joining to swell the symphony of praise to their Creator—the Eternal One.

We remained for a long time reclining on a rocky ledge from which we could see the waters of the Basin below us sparkling in the moonlight and enjoyed our romantic surroundings. But at length feelings of weariness and drowsiness came over us and we returned to our camp.

To be Continued.

DR BALL, of the Paris Faculty of Medicine, says that there is a broad frontier between sanity and insanity, and that most of us enjoy this "frontier life." He holds that the number of persons perfectly reasonable on all points throughout the entire period of their existence form a small minority of mankind.

For the Scientist.

Geography of the Heavens for April and May.

Uranography or the geography of the heavens is a description of the constellations with directions for recognizing them as well as the more conspicuous stars. This branch of astronomy may be studied without a telescope or a knowledge of mathematics and can therefore be undertaken by any intelligent person. The best aids in the study are the celestial globe and star maps and it is the aim of this article to awaken such an interest in this subject among the readers of the ACADIAN SCIENTIST as shall lead them to employ these aids.

It is estimated that a person with ordinary eyesight may in this latitude see about 3000 stars above the horizon at once. These are all grouped into constellations and numbered or lettered for reference. Stars are grouped according to their apparent brightness into magnitude ranging from the 1st to the 6th, visible to the naked eye, and much lower for the telescope. The twenty brightest stars are called first magnitude stars and of these fourteen are visible in Nova Scotia. They are: 1st, Sirius, in the Constellation Canis Major; 2nd, Capella in the Waggoner; 3rd, Arcturus in Bootes; 4th, Vega in the Lyre; 5th, Procyon in Canis Minor (Lesser Dog); 6th, Aldebaran in Taurus; 7th, Rigel; 8th, Betelgeux both in Orion; 9th, Spica in the Virgin; 10th, Antares in the Scorpion; 11th, Altair in the Eagle; 12th, Pollux in Gemin; 13th, Regulus in the Lion; 14th, Fomalhaut in the Southern Fish. During April eleven of these may be seen above the horizon at one time all but numbers 10, 11 and 14.

To find these stars it is advisable to take some well-known constellation

as a point of reference. The most serviceable for this use are Orion and that part of Ursa Major known as "The Dipper."

From the former, six first magnitude stars may be found. Orion is a very conspicuous constellation in the Southern heavens during the winter months and it is visible to May. It is easily known by three bright stars of the 2nd magnitude in a straight line, equidistant and occupying 3 degrees of the heavens. These are the *belt* of Orion, but they are also called the Three Kings and in Job the *Bands of Orion*. They are also called the Yard and form a convenient measure for celestial measurement. About equidistant from this belt, on either side, some ten degrees distant are two stars of the first magnitude, the one on the North, Betelgeux and that on the South Rigel. A line drawn through the three stars of the belt extended to the left or East will at the distance of about 20° pass a little above Sirius, the brightest star in the heavens; a similar line extended to the right or West will at the same distance pass below Arcturus a very conspicuous star in an angular group called the Hyades. Directly East from Betelgeux at a distance of 26 degrees is Procyon. It is the same distance from Sirius, and these three stars, Sirius, Betelgeux and Procyon, form an equilateral triangular. Directly North from Procyon at a distance of 23 degrees are two bright stars β degrees apart called Gemini or the Twins. These are Castor and Pollux, the latter being on the left.

These directions carefully followed will enable the beginner to locate a number of first magnitude stars and will serve as an introduction to what he will find to be a very pleasant study.

A. E. COLDWELL.

MESSRS. ALVAN CLARK & SONS, of Cambridgeport, Mass., have just completed for the Russian Government the object glass for a telescope, which, when completed, will be the largest in the world. The glass has a diameter of thirty inches which is four inches more than that of the Washington telescope. The temporary tube in which this glass was placed for trial before being shipped to its destination was forty-five feet in length. The Americans, however, are still bound to be ahead. The same company has engaged to manufacture a thirty-six inch object glass for the Lick Observatory of California.

CANNIBALISM IN NEW ENGLAND.—Mr. Henry W. Haynes read before the Boston Society of Natural History, May 17, 1882, a paper on some new evidences of cannibalism among the Indians of New England from the Island of Mount Desert, Maine. The evidences are the shell-heaps, and the witnesses are crushed human bones among the remains of feasts.—*American Naturalist*.

THERE IS SOMETHING BARBAROUS and repulsive in the fashion of making cripples of Chinese women by lacing their feet. Would it be more humane to make perpetual invalids of them by lacing their bodies?—*Hall's Journal of Health*.

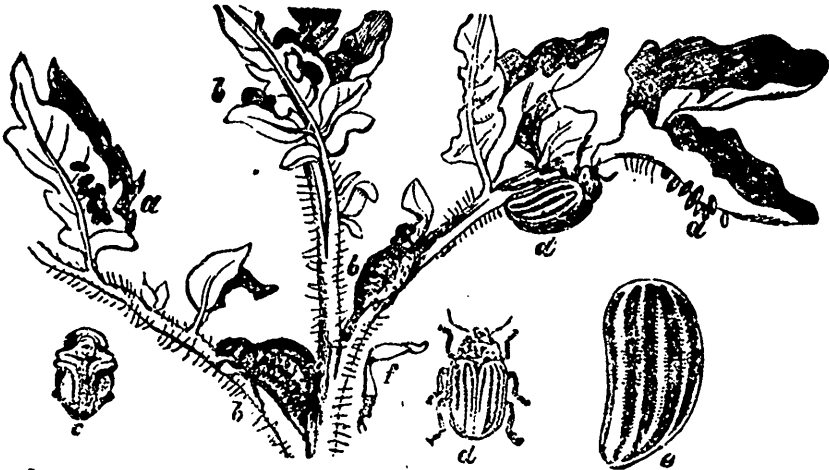
HERR GRUBER has been studying the sense of hearing in insects, and finds that cockroaches, beetles, and certain aquatic insects are very sensitive to sounds, while grubs, ants and various water larvæ appear to be unaffected by them.

IT IS ESTIMATED that there are five times as many kinds of insects as there are species of other living things all put together—750,000 species already observed.

[For the SCIENTIST]

THE COLORADO POTATO BEETLE.

BY A. H. MCKAY.



The above cut represents in its various stages the Colorado Potato-beetle—an insect only too likely to be well known in Nova Scotia before the approaching summer is over. It was first described and named by the great American entomologist, Thomas Say, about 1824. He found it quite common on the Upper Missouri, and named it *Doryphora decem-lineata*, the specific name being an allusion to its ten lined wing covers. These hard wing covers, called *elytra*, protect the rose-red under wings which are folded up under them when the insect is not flying. One of these is figured enlarged at *e*, the colors being a dull orange and black. From this character it is placed in the order *Coleoptera*, (from *coleos* “a sheath or case,” and *pteron*, “a wing.”) The orange oval eggs are represented at *a*. They are generally in clusters of from 10 to 40 attached by the ends to the under-side of the leaf or to the stem. The larvæ in different stages of growth are shown at *b*. Hideous hunch-backed creatures they are, very voracious, and as they arrive at maturity, showing a double row of black dots on each side. The *pupa* or *chrysalis* which transforms in the ground is figured at *c*; the *imago* or perfect beetle, in black and orange, at *d*; and a leg, magnified, orange and black, at *f*.

LIFE HISTORY.

The perfect insect hibernates during winter, sometimes under rubbish, but generally only a few inches under the ground. They have been found two or three feet below on some rare occasions. In spring even before the tender potato tops appear these may be seen flying about in search of company and food. As soon as the potato leaves appear, the female commences laying the eggs in clusters, and continues for three or four weeks, during which time she may deposit over five hundred eggs. In warm weather these are hatched in about a week, and forth comes a horrid ravenous brood. In the United States the larval condition continues for about three weeks, at the end of which time the grub descends into the ground and changes into the pupal form. In from seven to ten days, it comes forth from its coffin a full-fledged beetle ready to commence the work of egg depositing again. In Nova Scotia these changes, from the imperfect observations made last year, appear to take a longer time. In the South, there are three broods annually, the last brood of beetles going into the ground again to hibernate. Further North the pupæ of this brood do not emerge until spring, passing the win-

ter in the pupæ stage. In Nova Scotia the observations made indicate only two broods in the season.

MIGRATION HISTORY.

Although known as early as 1824 on the Upper Missouri it was not until 35 years later that they were heard of as a mobilised army of invaders. In their original wilds they fed, according to Riley, the great American entomologist of to-day, on the sand-burr (*solanum rostratum*), a species of wild potato having burrs. These were easily carried by animals in their furs farther East, until in 1859 the beetle passed plains and prairies to the cultivated potato 100 miles West of Omaha in Nebraska. With rich fields of food instead of straggling sickly plants the insect increased enormously. In 1861 it invaded Iowa. In 1862 Wisconsin. In 1864 it crossed the Mississippi into Illinois. By 1866 it occupied most of the land West of a line between Chicago and St. Louis. In 1867 it reached S. W. Michigan and W. Indiana. In 1868 it was found in Ohio. In addition to its own means of locomotion, it now utilised other means of conveyance, among the most effective of which have been the railway, the canal boat and the steamboat. In 1874 they reached the Atlantic and in 1875 spread from Maine to Virginia. From the West, they crossed the Clair into Canada in 1872. In 1877 they were reported in New Brunswick, and in 1880 were found on one farm in Nova Scotia. This first invading party appears to have been destroyed, for the next report was the capture of an invader who crossed the Isthmus, by Principa. Lay of the Amherst Academy in July, 1882. A few weeks after they appeared simultaneously in Prince Edward Island and at different points in Pictou County. From the Rocky Mountains to the sea they can boast of a victorious march against the combined forces of man and nature and fellow insects. Strange to say, the excellent President of the Entomological Society of Ontario, who visited Colorado in August of 1881 could find no Colorado beetle either on wild or cultivated plants of the potato family. Why? Have their parasites increased so as to destroy them? This question yet remains to be answered.

HOW TO FIGHT THEM.

The first and eventually the most efficient way is to encourage the multiplication of its natural enemies. It is said that domestic fowls may be trained to eat them. The skunk also. Among reptiles, the toad. Among spiders, the "long-legged harvestmen." A tachina-fly—much like a house fly (*Lydella doryphora*), deposits its eggs on the back of the larvæ. When they go into the pupal state the tachina eggs are hatched and the little grubs enter into the body of their host and soon devour it. An asilus-fly attacks them. So does the fiery-spotted ground beetle, two or three lady-bird beetles and the soldier bug, and many others. These parasites and enemies are likely to become more abundant as their food becomes abundant, and they form a natural means to arrest the unlimited progression of the scourge.

The second best means is prevention. Some varieties of potato are much more to the taste of the insect than others. This suggests one possible plan. The spring beetles can often be killed before the potato leaves appear and the deposition of eggs is commenced, by trapping them with slices of potato dusted with Paris green, placed in such a position as not to be in reach of any other animal. The killing of one of these beetles is equivalent to the destruction of 500 four or five weeks later.

The third method is the capture or slaughter of the depredators. First the picking by hand of the leaves with the eggs. But as the eggs of some of the beneficent lady-birds are very much like them, but invariably a little smaller, the collector should carefully discriminate. Second, the picking of the beetles and the larvæ. And third, the wholesale poisoning of the insects by means of *Paris green* or *London purple*. The former, which is an arsenite of copper, containing about 60 per cent of arsenic when unadulterated, has the strongest testimony in its favor. A good teaspoonful of the poisonous powder, the dust of which should not be breathed, should be thoroughly mixed with a bucket full of water. This water should then be sprinkled on the potato tops with a wisp, keeping the water always well stirred. The teaspoonful of Paris green may also be mixed very thor-

oughly with a peck of flour or ashes, and then the potato tops may be dusted with the mixture. It should always be remembered that Paris green is a deadly poison and some people are sensitive to the inhalation of the slightest amount of the dust from it. The contact of the arsenical poison is death to the potato-b. etle, unfortunately also to the lady-bird, and other beneficial insects. No method is better than *picking* when that can be cheaply done.

Young scientists will very probably have every opportunity of studying this insect during the coming summer, and also the other coleopters referred to as its natural enemies.

☞ If our readers would immediately report the first appearance of this insect in their several localities during the present summer, to the Principal of the Pictou Academy, N. S., they would confer a favor, and at the same time help to forward the cause of Science.

LITERARY NOTICES.

Miss Tickner's novel, "The Jewel in the Lotus," commenced in the January number of *Lippincott's Magazine* and still continued in the April number, is the most captivating story now running through any of the magazines, full of warm, human life, yet free from vulgar realism, beautiful in style, vivid in its portraiture and descriptions, and animated in its dialogues. It is such a novel as tends to increase one's faith in his kind and give him an enlarged conception of life and its duties, that will make him so live that the world may be better for his presence. If this magazine and literature of a similar character were placed more generally in the hands of the youth of our country, just now, while their tastes are being formed, we feel sure that they would turn with disgust from the vile trash which, in so many forms, eminently that of "fireside" (?) journals, enters and constitutes the almost exclusive literary diet in many homes. The April number before us contains other stories and much matter of a less imaginative character. There is "A Pilgrimage Down East," giving graphic sketches of places

and people; also "The German Element in the United States." There are also other interesting articles with spicy editorial departments.

WE have received from Messrs. Southwick & Jencks, of Providence, R. I., their new catalogue of bird-skins, eggs, and other natural history objects. It is very artistically executed and worth much more than the price, which is 25 cents. It contains in addition to lists, a chapter on making bird-skins, preparing eggs, etc.

EXCHANGE DEPARTMENT.

Every subscriber has the privilege of inserting in this department one notice, not exceeding five lines, each year. Beyond that, and for non-subscribers, the charge is five cents per line.

California Marine Shells and Echinodermus for sale and exchange. Will exchange for marine shells from any part of the world. List of species and terms sent free on application.
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I wish exchanges in minerals and shells from all parts of the world. Can send invertebrates from Bay of Fundy and fine zeolites and other crystallised minerals of this region.
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W. H. BEAN,
Lebanon, Warren Co., O.

I have on hand quite a large collection of the Colorado Beetle in alcohol which I made last summer in Maine. I will send specimens to localities where the pest has not yet appeared on receipt of stamps to cover postage.

Editor, ACADIAN SCIENTIST.

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