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NOTES ON THE BIRDS OF MANITOBA.

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

The well-known King-bird or Tyrant Flycatcher, *Tyrannus carolinensis*, is abundant in Manitoba. A more fearless, inquisitive, pugnacious, and warlike bird it is difficult to imagine. Often when I have shot a bird as a specimen, up has flown a King-bird with a manner which gave him the appearance of saying—"Now, what's going on here"? To see a King-bird dash at and attack a huge Harrier, for no other purpose whatsoever than to have a fight, is a thing of common occurrence, and the Harrier always tries to avoid and escape from his assailant. The King-bird breeds in the low scrubby oak trees which cover the sand-hills, building, like the Shrike, a nest consisting largely of the stalks of a species of *Gnaphalium*. After the young are able to fly they often live round the settlers' houses on the open prairie, but about the end of August they all leave.

Among the trees on the sand-hills and in the bluffs the Night Hawk, *Chordeiles popetue*, is abundant, and makes itself very conspicuous towards evening by its loud scream, by booming, and by displaying during flight the unmistakable white patch on each wing. Not unfrequently it may be seen on the wing at mid-day; and it always makes an appearance long before sunset, sailing about at a great height and screaming frequently. After flying awhile over the head of any intruder, it suddenly spreads its wings, and giving a wide swoop downwards, emits a loud booming noise, which has gained for it in some parts of America the name of "Bull Bat." That this noise is made over one's head in order to threaten or intimidate seems to me pretty certain, but I have also, I believe, heard it emitted at a distance, without any such object. It breeds

commonly among the trees on the sand-hills. One day early in August we found a nest, or rather two young ones—for nest there was none—about three days old, with the egg-shells lying near. Though so young, one of the nestlings, which we afterwards proved by dissection to be a male, was very pugnacious, and snapped his bill menacingly when touched; the other was perfectly quiet, so we concluded, though we could not prove it, that it belonged to "the gentler sex." While we were at the nest the old birds were, as usual, very solicitous for the safety of their young, settling on trees, fallen logs, the ground, and fluttering round to draw off our attention. The number of old birds began to get very much less by the end of August, but a few were nevertheless seen well on into September—one as late as the 11th. After the migration commenced they were not unfrequently seen in the evenings flying over in large straggling parties, circling about as they proceeded. These parties usually travelled south-west I believe, though this is not the direction usually chosen by the other birds of the district when moving south.

The Whip-poor-Will, *Antrostomus vociferus*, differs from its near relative, the Night Hawk, in several particulars. It seldom leaves the woods and comes out onto the open prairie; and, even among the trees, it is seldom or never seen sailing about high overhead during daylight. It is also a much shyer bird; and, although its highly remarkable far-sounding voice may often be heard, it needs great caution to get within a sufficiently short distance to see the performer. About the end of August all the Whip-poor-Wills seemed to have departed, and I was therefore considerably surprised to hear the unmistakable voice of one in the woods near Carberry on the evening of September 11th. This bird is also very solicitous for its young. Going one evening into the woods to fetch home an easel Mr. Seton had left when sketching, we were almost mobbed by a pair, which kept on for some time, tumbling about

among the bushes and settling on the charred logs of trees felled by the fire. We must have been very close to the nest; but it was too dark to find it, though we felt the ground all round.

Several species of Woodpecker are common in Manitoba, notably the Golden-winged, *Colaptes auratus*, which breeds frequently in holes in the trunks of poplar trees in the bluffs.

The Red-headed Woodpecker, *Melanerpes erythrocephalus*, also breeds, but is much less common.

The Short-eared Owl, *Asio accipitrinus*, seemed to be decidedly uncommon. On the evening of August 20th, 1883, just as it was getting dusk, I fired at one sailing overhead. I thought I had missed him, but it was just light enough for us to think we saw him alight in an open spot in a neighbouring field, so we decided to go and look on the morrow; however, the following day was so windy and wet that we did not go till the afternoon of the day after, when we were surprised to see the bird rise, apparently unhurt. It fell to Mr. Seton's gun, and after a careful examination we could not find that it had received any previous injury, except a slight graze on one wing; yet it had been foolish enough to sit moping in one spot for over forty hours with nothing to eat except one large dragon-fly and a great brown cricket, as we afterwards found by dissection.

The Marsh Harrier, *Circus cyaneus hudsonius*, is a very common bird throughout Manitoba, and may often be seen sailing over the prairies, the sloughs, or the wheat-fields. One morning late in August I remember counting a dozen round one house. It must breed there, but Mr. Seton has never discovered a nest. Nearly all the individuals I saw were in the brown plumage; only three or four wore the adult bluish ash-colored dress, but Mr. Seton says that adult specimens are much more often seen at the time of the spring migration. This bird often comes and inspects the settlers' chickens, but seldom carries off any except very young ones—

gophers, mice, and grasshoppers being its usual prey. It is exceedingly easy to shoot, and one or two dead ones may often be seen lying round a farmer's house. The Harrier became a much scarcer bird as September wore on.

The Turkey Buzzard, *Cathartes aura*, is probably now a less common bird than when the Buffalo was an inhabitant of the prairies, but is still not unfrequently seen, especially if there be a dead horse or other animal in the neighborhood. Its powers of flight are magnificent.

On the evening of September 4th a flock of sixteen noisy Wild Geese flew with a swift flight over Carberry to the south-eastward. They formed the vanguard of the great army of migratory birds which, going northward in the spring to breed in myriads on the shores of the Arctic Sea, returns south again in autumn with its numbers increased by the yearling birds.

After the date mentioned, the migration among wildfowl and raptorial birds became much more marked. Goshawks, *Astur atricapillus*, though formerly unseen, became fairly common.

The Peregrine, *Falco peregrinus*, hitherto scarce, was now the reverse, though still not very numerous. On the 11th one perched on a fence close to the house; I was just on the point of firing at him with a rifle, when he rose; then, after sailing once over the chickens, he hovered over them for nearly half a minute as cleverly as any Kestrel could have done—indeed, so stationary in the air was the bird that I essayed a shot, but the bullet missed.

About this time, too, Buzzards became much more numerous. On the 14th an old male specimen of Swainson's Buzzard, *Buteo swainsoni*, in very ragged plumage, was brought to me.

The migration among raptorial birds at this period was made still more obvious by the decrease, as already mentioned, of the Harriers, and by the sudden increase in the numbers of the beautiful little American Kestrel, or as it is always called, the "Sparrow

Hawk," *Falco sparverius*. Although I had during the summer found this in fair abundance in the woods and among the trees growing on the sand-hills (where it breeds in the deserted holes of the Golden-winged Woodpecker), it became far more abundant round Carberry on September 7th, and on that day alone I saw more than during the whole of the rest of the time I was in the country. All day long they were round the house, sitting tamely on fence-posts and buildings, and often chattering like their European brothers. At one spot about a mile from the town, where there was a cluster of trees, I found what I can scarcely call by any other name than a *flock* of them, as from twenty-five to thirty remained there the whole day. For several days after the 7th they were fairly numerous, but all disappeared about the middle of the month. The few that were shot had been feeding on grasshoppers only, and on one occasion I watched through a telescope a bird that was catching grasshoppers among some potatoes.

A most comical affair happened one day in connection with three Goshawks. A friend of mine had shot a Harrier, and left it near his house. Some time after, as some chickens were feeding on the maggots in the body, three Goshawks appeared on the scene quickly swooped at the birds, to all appearance carrying one off to a neighboring field. Mr. Seton, who followed to avenge the death of this supposed hen, soon shot two of the Goshawks, when he found that, instead of carrying off a hen, they had possessed themselves by mistake of the putrid and dried-up body of the Harrier!

Numerous as were many of the larger Hawks at this time, I was told that they were far more so at the time of the spring migration northwards; so it appears probable that for some reason they follow different routes upon the two journeys, as is often observed in England. The same remark probably applies to the Whooping Crane, *Grus americana*, for, although in the autumn I did not see one, it is said to be common in spring-time.

The American Bittern, *Botaurus mugitans*, is pretty common in the moister parts of the country,—near the Red River, for instance,—where I have often seen it disturbed by the passing train.

On August 30th a friend shot a young specimen of the Passenger Pigeon, *Ectopistes migratorius*, as it sat upon a tree near Carberry, but this was the only specimen seen during my visit.

No small portion of the Manitoban settlers' diet is formed of the flesh of the Sharp-tailed Grouse, *Pediacetes phasianellus*, always known as the "Prairie Chicken." To this bird, which is resident in Manitoba throughout the year, Mr. Seton has devoted much attention, and has elucidated many interesting points in its natural history. The nest is usually formed in long grass, generally near trees. In it the hen deposits fourteen to sixteen eggs, which, curiously enough, are rather smaller, as Mr. Seton points out, than those of the "Quail" (Bartram's Sandpiper), a bird just one eighth of its weight. The pairing is carried on in a very absurd fashion, parties of from one or two to twenty assembling in the early morning on some small hillock, and there dancing in a manner which is most ludicrous to behold. About the middle of August, or earlier, a row of stiff bristles or scales commences to grow on each side of the toes of both old and young. These are fully grown by October, and henceforth the birds are provided with snow-shoes for use during the winter. In spring these bristles entirely drop off. The birds spend the summer out on the open prairie, and while it lasts they seldom perch on trees; but in winter they all adjourn to the bluffs and woods, and spend the time there feeding on the buds of the trees, and at night diving down into the soft snow-drifts for warmth and shelter. Although they bury themselves to the depth of about a foot, many are killed by wolves and foxes, whilst others are fatally imprisoned should a slight thaw and subsequent frost harden the surface of the drift. In early spring, before the snow is gone, they emerge again upon the prairies where

the hips of the wild prairie-rose, which are held above the snow, provide them with food, while the excessively hard seeds the hips contain act as a substitute for grit in the stomachs of the birds. Early in May they feed, like many o'her prairie animals, upon the blossoms of the abundant sandflower or prairie anemone, *Anemone patens*, var. *nuttalliana*; and later on they consume quantities of grass-hoppers, together with seeds and berries.

The Kildeer Plover, *Ægialites vociferus*, is not uncommon round some of the lakes.

On August 3rd we shot several specimens of the Lesser Yellow-shanks, *Totanus flavipes*, and one of the Greater Yellow-shanks, *T. melanoleucus*, round a lake near Carberry; they were clearly on migration, as they were the first of their kind seen.

On July 10th, 1884, I shot a specimen of the Solitary Sandpiper, *Rhyacophilus solitarius*, at Maple Creek, 597 miles west of Winnipeg; it was doubtless breeding. In the dry bed of the creek I also caught a nestling bird, which was probably of this species.

During the summer no bird is more familiar on the Manitoban prairies than the Upland Plover or Bartram's Sandpiper, *Bartramia longicauda*, commonly there known as the "Quail," from its note. Surely no bird ever differed more completely from the generality of its relatives than this! It is a Sandpiper which does not appear to frequent marshes, which breeds habitually on the dry open prairies, and which is frequently to be seen perched among the branches of trees. Its tameness is excessive. Often when driving over the prairie I have seen it remain within three yards of the passing vehicle without the slightest concern. When on the wing, it offers a shot so temptingly easy that few can resist. Its note is a highly remarkable one, not easily forgotten when once heard. Dr. Coues well describes it as a "long-drawn, soft, mellow whistle, of a peculiarly clear, resonant quality." It breeds abundantly on the open prairie, and I have several times caught the young in down. The

majority left Manitoba towards the latter end of August, but I was several times surprised at hearing or seeing a belated pair until quite late in September.

The Carolina Rail, *Porzana Carolina*, is common during the summer among the reeds and rushes round the lakes, where it also breeds.

In the open and less frequented parts of the country, like the sand-hills south of Carberry and the prairies of the Upper Assiniboine, the Sand-hill Crane, *Grus pratensis*, breeds pretty commonly. They often feed in the swamps, and their loud, hoarse, rattling croak may be heard for long distances when their solitudes are invaded. Their speed when on foot is very considerable; I one day drove across a moist portion of country after a pair, which for a short time seemed inclined to rely for safety on their legs rather than on their wings. During September small parties of from ten to twenty were seen almost daily passing over southward at an immense height and attracting attention by their loud croaking, which gradually died away in the distance as the birds disappeared.

During the whole of the autumn the southward migration of wild fowl was very noticeable. Until late in September small flocks of from twenty to thirty Wild Geese were often to be seen flying over, generally in the shape of a well-marked V. They usually went towards the south or south-east, which latter especially is, I understand, the general direction of the autumnal migration over Manitoba; so that it seems probable that the birds, in coming from the extreme north, follow the line of great lakes extending from the Great Bear Lake to Lake Winnipeg, afterwards following the valley of the Red River, crossing the narrow watershed into the valley of the Mississippi, and wending their way along it still further to the southward. During this autumnal movement the number of ducks frequenting the lakes and ponds throughout Manitoba is prodigious. I shall not soon forget the hundreds I saw on the numer-

able ponds between Rapid City and the Oak River, whilst on an excursion towards Fort Ellice, in the middle of October, 1883. Yet those I saw must have been as nothing compared with the abundance to be seen in some other places. A friend who had several days' shooting at Totogon, near the south end of Lake Manitoba, about the end of September, describes the ducks as being so numerous that only the terms "acres" and "millions" could adequately express their abundance. The majority were Mallards, *Anas boscas*, but there were also Blue-winged Teal, *Querquedula discors*, Green-winged Teal, *Q. carolinensis*, Scaups, *Fulix marila*, and others. The Mallard, with various Shovellers, Scaups, Pintails, and Teal, breeds regularly in the lakes and sloughs. When travelling towards Winnipeg by the line running northward from the United States boundary on June 13th last (1884), I saw many newly-hatched broods of ducklings, both Teal and Mallard, swimming about in the ditch beside the track; the old birds rose and flew off as the train approached. At least two species of Tern breed very abundantly on the islands in some of the larger lakes, while several Grebes are not uncommon in the same situations.

In conclusion, I will only add that there still is in Manitoba a large field for ornithological work. If only a few of the many young men of good education who have recently emigrated thither could be persuaded to turn some of their attention to the study of its birds, many highly interesting facts would certainly be brought to light.

NOVA SCOTIAN GEOLOGY.
PAPER VII.

Rev. D. HONEYMAN, D. C. L.

KINGS COUNTY.

One morning in June, 1877, I left Halifax with the determination of making an intimate acquaintance with the rocks of Kings County. Arriving by train at the Wolfville station, I took the direct road

past Acadia College, to the high land, with the expectation of meeting with rock exposures. I took a passing look at the amygdaloid boulders in the drain, regarding them as the possible fellow travellers of our Halifax drift acquaintances. Reaching the height above Wolfville I was gratified to find a good exposure of solid strata. Standing on these rocks I deferred operations until I had admired the interesting scenery in view.

Below lies old Acadia College, the beautiful town of Wolfville, and *Grand Pre* of Evangeline fame, with its brilliant garb of summer green. Beyond stretches Cornwallis with its serpentine streams, its fertile fields and numerous villages. Towering on the north is North Mountain with Blomidon looming and advancing into the Minas Basin heading the Minas Channel, Cape d'Or and Cape Chignecto. This fine sheet of water, bounding *Grand Pre* and Cornwallis extends to the distant north as Minas Basin and Cobequid Bay. The Cobequid Mountain range of Cumberland and Colchester rises in the dim distance beyond.

Having thus indicated the sphere of our operations and our first starting point. I shall arrange my remarks on these operations under these comprehensive divisions:

- 1 Pre-carboniferous.
- 2 Carboniferous,
- 3 Post-carboniferous.

1. PRE-CARBONIFEROUS.

Quartzites, Argillites, Diorites, &c.

Our examinations were of two areas. I would call them respectively the Wolfville and Kentville areas.

A. The Wolfville area is about 20 square miles in extent. Its N. E. corner lies in Wolfville. Its N. W. at the entrance of the Deep Hollow road. The S. E. corner is at Vaughan's mill, Greenfield on Halfway River: the S. W. corner is at Bezanson's mill on Black River. The distance between these two points is about 3 miles. Greenfield is about 5 miles from Wolfville, S., and 5 miles E. of the Falls of Black River where the Pre-carboniferous and Carboniferous appear in close connection, on the Halfway River road and side of the mountain.

The rocks in this area are largely obscure; still there are many and interesting exposures around Wolfville, in the Deep Hollow

road, in the Gaspereaux River, Black River, and Halfway River.

The formation heretofore has been considered to be Upper Silurian. I consider it to be "Lower Silurian". This was the opinion formed when I examined the rocks of the area, and my investigations in the extension of these westward has only strengthened this opinion.

The argillites, grey, red and black, are in a state of metamorphism more decided than any Upper Silurian rocks that I have met with in Antigonish, Pictou, or Colchester counties. They approximate more nearly to the Argillites of Halifax, with the exception of the red and grey colors, so that I felt disposed to refer them provisionally to the same age-Cambrian.

The great quartzites at the meeting of the Deep Hollow and Gaspereaux roads near the saw mills, the quarries in these beds, the various blocks of quartzite dislodged, the beautiful dendritic and moss-like figuring in the cleavage joints, even more striking than in the Halifax quartzites, all tended to deepen the impression. The Diorites in the Deep Hollow, which elsewhere, e.g. at Nictaux are considered to be intrusive rocks of Devonian age and do not occur in the Halifax Cambrian, are however *inimical* to this relationship.

At Willet's saw mill on Halfway river, there is a section of Carboniferous strata. South of this the underlying formation is obscured. According to W. A. Hendry's survey of the county line between Kings and Hants, the Carboniferous of the bay extended 2 miles and after an obscure interval of 1-2 mile is succeeded by granites. I presume the intermediate 1-2 mile is occupied by our Pre-carboniferous. It has thus become greatly reduced in width as it approaches its probable termination eastward.

2. CARBONIFEROUS.

Granites. The Granites of the County line, are represented in one area only by masses and boulders, none was seen *in situ*.

These granites are considered to be of Devonian age, by Dawson and Selwyn. Dana, in the map of his text book represents them to be ~~older~~. I consider them to be *older* than the argillites, quartzites and diorites and therefore of pre-middle or pre-lower Silurian age. In my maps I designate them as Archaean, (6). I may give proof in a subsequent paper. It may be found in paper, "On the Geolo-

gy of Annapolis Co., Nictaux" (*Trans. of Institute of Nat. Science, Vol. IV.*)

2. *Carboniferous.* This formation begins at the East side of Wolfville in Harding's Brook where it is in contact with the Pre-carboniferous, at its "N. East corner." Its next appearance is at the back of Wolfville where it is well seen on the road to Gaspereaux and in an adjoining hollow. The strata are very coarse grits overlying the pre-carboniferous argillites. It next appears at the bridge of the Gaspereaux River, adjoining pre-carboniferous argillite. I have already noticed its next appearance on the road to Halfway River where the rocks are also coarse grits overlying the pre-carboniferous argillites. The most interesting part of this formation is Horton Bluff with its reptilian foot-prints, scales, jaws and spines of fishes, and flora, lepidodendra &c., and matted furoids (?). These can be seen in our Museum Collections.

POST-CARBONIFEROUS.

Triassic strata are seen in conjunction with Lower Carboniferous strata in Harding's Brook, Wolfville. The two series are so nearly alike in color as to be only separated by other differences. S. D. MacDonald mentions a locality on the shore at Grand Pre, where their relations are more obvious. I think that this must be the position referred to in Dawson's *Acadian Geology*.

The continuation of this series beautifully exposed at Starr's Point contains veins of Calcite. Some of the rhombs of these are so transparent as to be doubly-refracting. (Iceland spar.)

The only exposure of this formation at Wolfville, besides that at Harding's Brook is at Jessup's. Here the strata are not much different from Drift in appearance and lie *directly* on the Pre-Cambrian—without the interposition of the Carboniferous.

In my next paper I may give the reasons for this.

ERRATA.—In *Nova Scotian Geology, Paper VI.*,

Page	58	line	22	for "new" read iron,
"	59	"	3	" "Siberian" read Silurian;
"	59	"	22	" R. G. McLellan read R. N. B.

[McLellan.

Editorial Corner.

We wish to urge upon our young readers the fact that there is no recreation from which they can derive so much genuine satisfaction combined with useful knowledge as from collecting and studying in one or more departments of Natural History. The boy at school (aye, and girl too) can without any interference with regular studies, make a collection of the minerals, insects, shells or plants of his neighborhood which will in itself be a source of interest to himself and friends, while in his rambles among, and intimacy with the natural objects of his vicinity, he will of necessity make more or less observations useful to others as well as interesting to himself.

Every public school teacher should have a general knowledge of the elements of the Natural Sciences. He should at least be able to name and classify the common animals, plants and minerals of his district. It is very easy to awaken in children a lasting interest in natural objects, and the opportunity should not be neglected.

How to secure a collection of minerals at small cost—send your second hand books and magazines to the *Natural History Exchange*, Kentville, N. S.

NOTES AND COMMENTS.

The conclusion seems to be that up to comparatively recent times Sahara was a well-watered and wooded region, mostly inhabited by pastoral and agricultural communities, the descendants of more primitive peoples, who were contemporary with Palæolithic and Neolithic man elsewhere. Dr. Oscar Lane who has just published his late explorations, believes the desiccation to have taken place during the historic period, and attributes it largely to the reckless destruction of the woodlands. As vegetation disappeared, so did moisture, the large fauna became extinct, and the settled populations were succeeded by nomad Berbers and Semites. The Crocodile still survives in many of the pools and lakelets which here and there mark the course of mighty streams.

Moral: Canada, America, requires intelligent legislation on the subject of our forests.

The Kingdom of Congo. The limits of the new "Kingdom of the Congo" as recognised by the late Berlin Conference, appear to be as follows: On the Atlantic Sea-board from Banana to Yabe (5 deg. 45 min. S. Lat.), then due east to the meridian of Ponta da Lenha, thence north to the Chilongo, thence along this river to its source, thence to the Mtomba-Mataca falls of the Congo, thence up the river to its confluence with the Bumba beyond the equator, thence north westward undefined. The southern frontier follows the Congo from Banana to a point a little above Nokki, thence due east to Quango, thence along this river to about 9 deg. S. Lat., thence in a diagonal across the continent to Lake Bangweolo. Eastwards the boundary coincides with the west coasts of lakes Bangweolo, Tanganyika, Muta, Nzighe, and Albert Nyanza. Within these limits the new State will have an approximate area of 1,000,000 square miles and a population of probably 40,000,000, mostly of Bantu speech and Negro or Negroid stock.—*American Naturalist.*

The cataracts of the Nile, it appears, have not been accurately placed in maps hitherto. This explains some of the difficulties of the concentration of the British troops at given points in the late war.

Dr. G. M. Dawson has shown that the Rocky Mountains in British Columbia have risen 5000 feet since the Glacial Period.

C O R R E S P O N D E N C E .

Andromeda prolifolia is found in swamps everywhere throughout P. E. Island. As it is a northern plant and must have been introduced soon after the recession of the glacial cold, its distribution throughout the Maritime Provinces will be very complete, and it will most probably be found in Nova Scotia wherever soil and circumstances are adapted to its growth.

The Forest Tent Caterpillar was rather plenty here in 1884, but has been unknown this season. The Fall Web worm is much more abundant than usual.

The Butterflies *Cynthia cardui* and *C. Huntera* were very plenty last year but are entirely wanting this summer. The beautiful Aphrodite Butterfly, however, is more than usually abundant, as are also the *Hipparchia* butterflies and the little Skippers that wander from one grassy perch to another with such bewildering flickerings of their tiny jewelled wings.

Coddling Moths are very plenty and destructive this season. No doubt this has been caused by the abundant apple crop last year, and the neglect to destroy the wind-falls.

With the cultivation of Linden trees on the Island for shade and ornamental purposes, we have the Lime-tree Looper added to our insect fauna.

In regard to the disappearance of the Tent Catterpillar, I think that our climate is rather northern for this insect. It comes out properly in May, and though somewhat later here, still, is apt to experience cold unfavorable weather, which must retard its multiplication. It is different with the Fall Web-worm, which appears in July and August. Being an indiscriminate feeder and having the hey-day of summer heat to revel in, it never forsakes us, but spreads its destructive webs as regularly as the gossamer weaves on the dewy lawn.

Tiny green *Pyradies* are now (Aug. 20th) feasting in myriads on the rich forest cloak, and its fresh beauty will be sadly dimmed long before the wand of autumn touches its skirts with gold.

Tiger Moths are unpleasantly numerous round the evening lamps, and sometimes I observe the beautiful *Arctia virgo* come in with the more common dun-colored ones.

What species of insect is it that destroys the seeds of that standard old thistle *Cirsium arvensis*?

I find the following Asters growing here: *Aster salicifolium*, *A. perniciosus*, *A. miser*, *A. multiflorus*, *A. amplexicaulis*, *A. divergens*, *A. laxus*, *A. macrophyllus*, *A. foliosus*, *A. cordifolius*, *A. acuminatus*.

Will some one kindly publish a list of the Asters found in any locality in Nova Scotia for comparison with this.

F. BAIN.

North River, P. E. Island.

Literary Notices.

The American nation has a double birthright—liberty and land. Its liberty it has guarded jealously, but until very recent years it seems to have been indifferent to the loss of its public lands and ignorant of the methods by which they have been diminished. Hon. George W. Julian tells the story in brief in the *North American Review* for August. Five Medical authorities discuss the question: "Can Cholera be averted?" "The Animal Soul," "A Profane View of the Sanctum," "The Price of Gas," "Temperance Reform Statistics," are other noteworthy topics.

SCIENCE is a journal which no thorough going scientist can afford to dispense with, and even the intelligent unscientific reader needs it in order that he may be kept reasonably acquainted with the progression of scientific discovery and thought. Weekly, illustrated, \$5.00 a year. Science Co., Cambridge, Mass.

With whatever degree of scepticism the so-called science of Phrenology may be popularly regarded, there is no doubt that the *Phrenological Journal* is an eminently useful as well as interesting periodical. "Devoted to the study of man in his mental and physical relations," it treats of a large variety of subjects of scientific interest and freely discusses topics pertaining to health. 60 pp. \$2.00 a year. Fowler & Wells Co., New York.

The Naturalists' Journal is a neat little monthly of 8 pages published at Philadelphia by Robert T. Taylor. It is devoted to the interests of the Agassiz Association and to the assistance of young naturalists in general. It is well worth the small subscription price of 50 cents.

THE FOUNTAIN published at York Pa., by W. H. Shelley, is a bright sparkling monthly full of good things for teacher and pupil. It is well illustrated and contains a large number of contributed articles, while the merely nominal price of 50 cents places it within reach of all. Send 5 cents to the publisher for a sample copy.

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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