

with fledglings, one may hear the migratory "tsip" of earlier broods preparing to leave the woods. This is done gradually; by the middle of August small flocks are to be found in thickets and hedges of the more open country. From then on the deeper woods become very quiet, though there are always a few birds detained with late broods, even after the Wood Peewee's note is no longer heard. I have heard a White-throat in full song, in its breeding haunts, as late as September 27th (1908), but this is unusual. During September and October they are to be found chiefly flocking with other sparrows in the hedges of the open country, in the outskirts of woods, along river banks and in city gardens. In these situations they often utter their alarm notes, but I have yet to hear a White-throat singing in the open country.

By the middle of October the bulk have departed, and toward the end of the month practically all have gone; though I have one exceptional record, November 22nd, 1908, when I secured an immature bird and saw another.

My observations on the White-throated Sparrow were made in the counties of Laval, Jacques Cartier, Laprairie, Terrebonne and Compton, Province of Quebec.

FIELD NOTES OF CANADIAN BOTANY.—II.

BY EDWARD L. GREENE.

A year has passed, and somewhat more, since the first instalment of these notes was published. That paper, as may be seen by reference to it in the issue of THE NATURALIST for September of last year, consisted of notes on the vegetation of a tamarack marsh at Strathroy, western Ontario; and since I had not completed my account of the region as a whole, I may as well resume at the point where I left off.

I had descended to the marsh by a well-beaten path, evidently the trail of children and others of the Strathroy villagers who naturally resort to the place to gather its choice floral treasures in spring and summer. I left the spot from another side where there was no path; and on ascending to the slightly higher ground of the low hills that shut in the marsh on two sides, I encountered a low sumach thicket which, although it was the middle of June, was not yet in foliage. The sumachs are all late in coming into leaf, and this colony was at that stage when the new shoots are a few inches long, and the leaves barely beginning to unfold. There was that in the first near view of these shrubs, just emerging from their winter condition, their branches still



almost naked, which impelled me to halt and inspect them more closely. There were plenty of clusters of fruit remaining in fair condition from the autumn before. The drupelets were those of the group of *Rhus glabra*; and this was a surprise, because the first glance at the branches had convinced me beyond possibility of doubt that the colony was of the *R. typhina* group; not that they manifested that dense velvety, or rather plushy indument like that of the horns of stags when the horns are newly grown. There are *Rhus typhina* allies, unquestionably such to all who know them, that have no trace of the velvet or plush on their branches at any time. These are conditions of which the botanists who write the descriptive manuals know nothing. The book does not yet exist in which the most fundamental distinctions between these exceedingly common shrubs, those of the *glabra* type and those of the *typhina* type have been given. What the most essential characters of the two groups are, I proceed to state; and first, those marking the *typhina* group. The young branches are *cylindrical*, or *terete*, to use the good botanical term, which means that the cross section is in outline a circle; also the bark of such young branches is of a *deep or dark green*, without trace of bloom or pallor. In every form or phase or distinct species of the *glabra* alliance such young branches are not only *pale or whitish with bloom*, they are never cylindric or terete, but always plainly *angled*, their cross sections never circular, always angular, more or less definitely and acutely so. By such clear and definite notes as these may the botanist out of doors distinguish between these two types of sumach even in mid-winter; and both types are common over an area that embraces almost all of North America east of the Rocky Mountains. And the points of difference here emphasized have not been known to the writers of our manuals sitting in the herbarium, although herbarium specimens exhibit them.

I shall have more to say concerning the sumachs of Western Ontario by and by.

This perhaps more distinctively southwestern part of the great province, as I traversed it from Sarnia near the southern point of Lake Huron to Hamilton on Lake Ontario, and as I have walked some scores of miles of it in pursuit of botanical knowledge, has to me the appearance of what may have been from the first a gently undulating prairie country broken into sections of small extent by many woodland-belted rivers and their numerous lesser tributaries.

Across the prairie looking eastward from Strathroy I noted as at the probable distance of a mile and more a stretch of timber, where I supposed I should find a water-course of some kind, and on the wooded hills above one special desideratum, *Thalictrum*

dioicum. On reaching the woods, I found there no river or stream or streamlet, nor any spot at all where one would expect that species of *Thalictrum*; but I was slow in reaching the woodland destination because of the interesting objects—botanical—which I met with along the railway. The botanist in a prairie country always makes the railroads his highway as a pedestrian, because along such line only can he hope to find strips of prairie land that were never overturned by the plow, and where remnants of the original native plants of the region have stood chances of survival.

The first half-mile or so eastward from Strathroy by the railway is low prairie land, at least now, though almost doubtless it may have been wet timber land originally, the Sydenham River near which Strathroy was built being well timbered, like other streams of the region, all along its course. To the plant associations of this half-mile of low moist prairie I shall return later; but the boundary of this low land, at the eastward, is a low but broad ridge of dry and light sandy soil, perhaps a glacial deposit, or else an ancient bank of the river now a half-mile distant. The railway has been cut through this sandy ridge, and the land on the sides of the track is prairie never yet broken by the plow. On the northwestward slope of this slight elevation, under that protection from cattle which the railway fences secure to many an easily extinguished native flower, I recognized, even before I had come very near the spot, a fine colony of an old favorite not seen by me before for many a year, *Erythrocoma triflora*, the Three-flowered Avens, or Three-flowered Geum. This is one of several beautiful early spring flowers which botanists and lovers of wild flowers in Wisconsin, and in Michigan a generation ago, knew as the earliest things of spring, and they sought it as they did the Pasque Flower, *Pulsatilla Nuttalliana* and *Ranunculus rhomboideus* on the bleakest and coldest exposures of the knolls of glacial drift, where alone either one of the three was ever to be seen. Of course in the middle of June in western Ontario the *Erythrocoma* was past its flowering, but the tufts of soft feathery coma, that as an appendage to the head of seeds is almost as red as the flower itself—these remain until the beginning of summer and render a colony of the plants a thing of beauty as long as they last.

On this same slope I observed a single plant of a violet that I had not met with before, nor have I seen it since in any later travels. As to foliage alone it might have been *V. fimbriatula*, but it had three good marks to preclude its being referred to that common and rather widely dispersed species. Its stout root-stock was widely and multifariously branched, so that the plant as a whole formed quite a broad tuft. Entirely past the period

of its showy flowering, the apetalous summer flowers were as far as possible from standing upright as they do in that species; they lay close along the ground and on slender peduncles clothed with long soft hairs. Here, then, were three abundantly sufficient characters by which to have distinguished this violet as new. At a later date, only a quarter-mile away, growing as its habit is on sandy but damp ground, I saw plenty of *V. fimbriatula*, and here as always with its simple short rootstock, upright apetalous flowers and pods borne among the leaves, and the peduncles stout without hairiness. I am careful to describe both the localities, and the peculiar marks of these plants, in the hope that botanists resident in western Ontario may have an eye to their further investigation, especially in perhaps early May, when they should be in petaliferous flower.

A little beyond this sandy ridge the railway embankment, only a little elevated above the level of the plain, was thickly beset with a dwarf wild rose, now in the middle of June, well in flower. I supposed it to be a colony of my *Rosa pratincola*, an almost herbaceous rose abundant all over the whole prairie region of the Upper Mississippi and its tributaries but this identification will perchance not hold good. It was too early for the fruits, and the plants after all seemed rather too compactly colonized for *R. pratincola*.

At this good point of my route to the woodland I took observation of a grain field as occupying acres on one side along the railway, and on the opposite an equal stretch of pasture land, the pasture being more or less elevated and sandy, this ridge of drift, if such it be, sloping away and becoming evanescent at a distance of not many rods from where I stood within the railway enclosure. In this elevated and sandy part of the pasture close at hand there were blackberry bushes and a scattered colony of sumach, the members of this low of stature, much smaller than those on the hills around the tamarack swamp, and they seemed laden with last year's panicles of different shape as well as heavier than those of the other. As seen from a short distance, I was hoping this might turn out to be a member of the *Rhus glabra* alliance; possibly my *R. arbuscula* of the glacial drift in northern Indiana not so very far away; but an inspection of the shrub, with its branches just budding out into leaf, resulted in the certainty that this also was of the *R. typhina* alliance, possibly the same, specifically, as the other; possibly distinct.

The nearer approach to the woods that I had set forth to reach disclosed evidence that on this side of the prairie also, as on the opposite side of the town, the original limits of it had been somewhat extended, and that of the woodland correspondingly restricted since the first settlement of the country; for now, what

any one not a botanist and close observer would not have doubted about as a part of the pristine prairie, began to show fine patches of *Smilacina racemosa*, at this time in fresh full bloom, while along the fences there was a continuous row of bloodroot, this of course long past flowering. These and a few other plants which by nature are strictly woodland plants, will maintain a foothold and even flourish in the open, long after their forest shelter has been removed, so long as neither the plow nor the ruminants disturb them.

The wooded belt when reached did not prove to be the wild woodland I had hoped to see; nor was there river or even any streamlet coursing through or near it. What I had come to was but a series of well kept groves of young trees, such as the farmers had with excellent economy not only permitted to remain, but had kept clear of woody undergrowths, permitting not much except the native herbaceous plants and a scattered growth of currant and gooseberry bushes, natives of the soil, to remain. The most common tree was beech, but also there was no dearth of red oak, some white oak and bur oak, an occasional ash, more than an occasional linden and black maple, besides such things of smaller stature as *Carpinus* and the hop hornbeam, besides a *Crataegus* species or two. In less elevated and rather damp places I noted the presence of *Dirca palustris* and *Enonymus obovatus*. Where the shade was deepest, chiefly under the beeches and maples, there was abundance of *Arisaema* and of bloodroot, besides yellow violets, and clustered between and upon the superficial root-arms of the beeches was a great abundance of *Unifolium canadense*. In places less shady, and where they were partly open to the sun, there were beautiful patches of *Geranium Robertianum* in full flower at the time; also here and there a tuft of scarlet columbine. I have observed scarlet columbines all the way across the United States from the Atlantic to the Pacific, and have long known them in the Rocky Mountains of Colorado, and in both the Coast Range and the Sierra Nevada. Botanists in Europe and in America have distinguished several species, and I doubt not most of them are valid. This one of western Ontario at once presented one mark that was new to me among this group. The basal leaves were more elegantly and narrowly cut than any I had observed either east or west, and also they were of an almost whitish glaucous hue, though all of a sudden the stem leaves all, even the lower, were of the usual green of columbine leaves. And this plant is certainly not *Aquilegia canadensis*, for the sure mark of that is that its follicles when grown and mature spread away from one another at the top, and are even almost recurved. In the plant of western Ontario the follicles closely cohere to the very tips, and are even then con-

nivent rather than otherwise. The plant may not be new or undescribed; for careful people who have studied these plants in their native haunts in various places, and have cultivated them together have been obliged to distinguish several. Beyond doubt those listed and defined by Dr. Small in his excellent "Flora of the Southern States" are good. This plant of Ontario may perchance be one of those, but quite as probably it is neither; and assuredly it is not *A. canadensis* whatever it be.

Traversing this delightful succession of groves, I came at last to a dry open space, where the soil was sandy and the ground more elevated. By the presence of two or three other plants not seen before that day, I recognized the elevation as a continuation of the glacial drift I had passed an hour before. The best of these were *Ranunculus fascicularis* and *R. rhomboideus*. Both were past flowering and in good fruit; but they recalled again very vividly the gravelly knolls that in Wisconsin so long ago I used to visit early each spring to see and gather, among others before named, these two rare buttercups. I am informed by my friend Professor John Macoun that Goldie, who was the discoverer of *R. rhomboideus* and who published the species, almost a hundred years ago, was a settler in western Ontario, and botanized about Strathroy; so that here, without knowing it at the time, I was on classic ground for Canadian botany.

A COLONY OF CLIFF SWALLOWS AND OTHERS.

BY NORMAN CRIDDLE, TREESBANK, MAN.

While collecting along the banks of the Souris River near Treesbank on July 26th of this year, I came across several colonies of Cliff Swallows with nests built on the almost perpendicular banks of the stream. The first of these were well out of reach, but eventually I discovered two on quite a low cliff situated close to some convenient mud, which probably accounted for the unusually low site chosen. The two colonies contained about 130 nests, which were some 200 yards apart, the lowest being only five feet from the more even ground beneath and but a foot from the top. These were much bunched together and gave quite a strange effect to the cliff owing to their dark, pear-shaped forms and somewhat elongated necks against the lighter back-ground. Many of the young birds had already left their nests and could be seen flying with their parents, while others were only partly fledged, and several nests still contained eggs, though in an advanced stage of incubation.

As is well known, most swallows are attacked in their homes



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