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FALL MIGRANTS.

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An airman recently expressed the belief that the increasing interest in air navigation would eventually tend to induce a seasonal movement on the part of the human race. Even now many wealthy people spend the winter in Florida and California. In the days of the stage-coach, less than a century ago, this was unthought of. At that time a journey to the nearest town, even to one's nearest neighbor, was often an event. Only with the harnessing of steam and electricity was the Californian or Floridan trip possible to the northerner. Who can say what the mastery of the air will produce within another century.

Such thoughts should stimulate us in the study of bird movements—the migrations of these pastmasters in aeronautics. However, anyone who has become well launched in this study needs no such stimulant. Each recurring season he is refreshed by the return of familiar birds and thrilled with a glimpse of others that journey on to a more northern home. In the fall the southward journey completes the two movements known as bird migration—or rather I should reverse the order—the spring movement is the return home. Should it happen that certain birds, moving south in the fall, were to remain there, they would be emigrants from our point of view and immigrants from the southerner's viewpoint. Migration entails a return journey.

In this latitude the spring migration may be said to commence in February and finish in June; while the fall migration commences in July and extends into the winter, making an almost continuous movement of one sort or another, throughout the year, with the exception of three or four weeks during June and July, which marks the height of the nesting season in the north. Thus the fall migration covers late summer, autumn, and early winter, and the term is one of convenience as it marks the height of the movement.

To the novice, who has watched the return of birds in the spring for the first time, there is a vast difference in watching their fall departure. If you consider merely the facility in naming birds as they

pass and repass, the spring time is the most favorable for observation. In the first place, after our long winter we are eagerly awaiting the birds that we associate with warmer weather, and so most northerners are to some extent familiar with the appearance of our common birds in spring, although it is often the song that is welcomed—if it were not for the song many birds might escape notice. When recording the return of our summer resident birds one has these advantages. The bird is in full plumage (with rare exceptions) limited at most to two phases (male and female); it is generally in song, and one is more keenly on the lookout for it. Familiarity with the bird throughout the summer begets carelessness about its departure and the last birds are apt to slip away unnoticed. On the other hand those that merely pass through this district to nest farther north are often in a hurry—they may linger in the states to the south, but when this latitude is reached they appear to have an important appointment elsewhere and we miss seeing many of them.

In the fall these northerners are more leisurely; the call to move south is seldom so insistent and we have more opportunity to watch them. Again, they keep more in the open—one sees birds of the deep woods right at his door-step. Many times before starting on an all-day walk I have taken a preliminary survey in my garden, and have seen there the rarest birds of the day.

The feature that makes fall study at once a delight and a torment is the many different plumages often found in one species. Thus we may see juvenile birds changing into first fall plumage, those of an earlier brood that have already assumed fall dress, and adult birds in various stages of moult, all in the same flock. If, as is often the case, you are watching a mixed flock of birds that contains species with close resemblances and all in constant motion, confusion may reign.

In regard to classifying birds the disadvantages in studying fall migration are chiefly, comparative absence of song and greater variation of plumage;

while the advantages are a greater tendency on the part of many forest birds to come into the open, and to linger in orchards and gardens, even in the heart of the city.

This fact gives us at least one distinct and much needed advantage. During the height of the spring migration (April and May) there is a plentiful supply of water in the shape of surface pools and running streams, and the weather is cool. During the corresponding period of the fall migration (August and September) the country is much drier; few surface pools are found and the average temperature is higher.

I well remember one late summer's day, several years ago, passing through a small wood and hearing the call of some chickadees. As the chickadees were moving in my direction I awaited them to see what their travelling companions might be. Nature lovers generally are well aware of the chickadee's sociable nature during migration. Very soon I heard faint *tsips* and *tseeps*, and saw the vanguard of a flock of warblers and other birds. Instead of flitting past in the tree tops, they dropped to the ground about twenty-five feet away in a small glade where I joined them and found the ground about a small water hole literally covered with birds, all pressing forward for a drink and a bath. Others kept continually dropping to the ground and I soon counted a dozen species with scarcely any trouble, a contract that might have taken hours of observation under ordinary circumstances.

I found that this was the only supply of water in the vicinity and I was so impressed with the advantage of being enabled to view the birds from all angles at close range that I went home, resolved to build a bath in my garden. I merely dug out a shallow basin beneath a spruce tree a few feet from the dining-room window, and lined it with concrete. Since then I have been enabled to watch birds and dine at the same time. I must admit that it is sometimes a source of uneasiness to members of my family, although latterly some of them have become so interested in watching, for instance, a robin holding the bath against all comers, that they, too, have forgotten the more immediate purpose of the dining-room.

The study of migration is very exacting—pleasurably so. If one is keen to identify all of the passing birds he is liable to be dubbed a crank. I am constantly making observations from a car window, often to the disgust of my travelling companion, who may be in the midst of an anecdote. One cannot always choose ornithologically inclined company, and further one is loath to lose the psychological moment for an observation that may never occur again. Then there is the desire to give pleasure to

another or rather to share the pleasure of your discovery with another. Some weeks ago (Oct. 6) while half-asleep about midnight, I became suddenly alert at the repeated calls of a screech owl, coming in through my open window. I was so overjoyed that I immediately awakened my brother. On the night of Oct. 14, about the same time, I could scarce believe myself awake when I heard *sch'wet, sch'wet*, from the garden. Actually a saw-whet owl saw-whetting right under my window. On this occasion experienced warned me to restrain my enthusiasm and I listened alone. With regard to the screech owl, it seems to me that it is becoming more common in this district; that there is an apparent movement from south to north. Previously I had seen it occasionally, but this season I found its nest once and heard its notes on three occasions; once at St. Lambert, once at Lacolle, and again near Chambly. I have also heard other reports of its presence in other localities near Montreal. I cannot imagine why it was called screech owl—perhaps the original namer had conjured some terrible apparition after a bad fright and named it after his emotions. To me it sounds a soft, tremulous *wh-e-e-you-ou-ou*, repeated at short intervals.

When making the bath in the garden I thought, perhaps selfishly, that if my neighbor's gardens had no greater attractions than my own, in the matter of food and protection, my garden would still have to its credit a bird bath and drinking pool, which would attract some of my neighbor's birds. This it has done, and further, it has been the means of prolonging their stay. However, I did not carry my selfishness to an extreme and have since induced some of my neighbors to instal bird baths. As previously stated, the great advantage of the bath is that it brings the birds to the ground and enables you to see distinctly the markings of the upper plumage—an impossible feat when birds are in the top foliage of trees. This is especially true of warblers. Often in the fall when the yellowing leaves are drifting it is even difficult to say which are leaves and which are warblers. Moreover, I can safely say that it would be possible for me to follow the fall migration of most of our small perching birds without leaving the vicinity of the bird bath. I call it a bath instead of drinking pool, because as a bath I count it a greater attraction, as most birds can obtain sufficient water for drinking purposes from the beads of dew found in early morning on leaves and grass blades. As it would take too much space to discuss the fall migration in all of its phases I am going to speak more particularly of these garden visitors that can be observed by anyone who has a yard with vegetation, at a maximum cost of fifty cents and an hour's

labor. Of course you will have the trouble of keeping the bath filled with water, but with a garden hose it is a simple matter.

It has been my custom for several seasons to spend a few moments daily watching this bath. Even five minutes will give surprising results. In comparison with field notes, I find that the collective results give a fairly accurate idea of the birds prevailing at any time, except during very wet or cold weather.

After the middle of July, when vegetation is beginning to lose its bloom, and the cicadas are commencing to sing, I look in my garden for the first signs of migration. There are already arrivals to be seen along the beaches, such as certain shorebirds that start south early in July, but I am going to confine myself to birds that may be found in gardens. At this time you will find the usual concourse of summer resident garden birds at the bath—such as song and chipping sparrows, catbirds, robins, red-eyed vireos, wood pewees, yellow warblers, always the domestic sparrow, and possibly the Baltimore oriole, if it has not already effected its usual mysterious disappearance. Here is a chance for investigation. We know there is a period when the oriole stops singing in the garden, but does it really leave? There seems to be no direct evidence on this point. In the lot adjoining our garden there are some huge elm trees, that might harbor dozens of orioles in the dense foliage of the upper branches. I have caught glimpses of them there, also of wood pewees, catbirds, robins, and vireos, at times when their absence from the garden proper was very apparent. Go to the woods at this time and you will find a corresponding scarcity of birds. Occasionally you will get a glimpse of vireo, flycatcher, or warbler, feeding young in the upper foliage, but where are the many birds one saw earlier in the season? Are they, too, sitting motionless in the tops of the trees? Comparatively few of them have commenced to migrate. A little later when they commence to appear in force in our gardens we know the reason for the deserted woods. Perhaps the fact that there is little to attract us to the woods in late July and August is responsible for our lack of knowledge in regard to the habits of moulting birds. True, there are fewer mosquitoes, but I find the immense numbers of spiders that spin their webs everywhere, even a greater nuisance.

When I note the inactivity of birds during the moulting period, I am reminded of the custom of human beings at Easter. After wearing out their old clothes during the winter there is a blaze of color and activity on Easter morning. However, we cannot draw parallels between the habits of birds and human beings. There is probably a more

vital reason for the retiring habits of birds during the moulting season. For one thing their loosening feathers and ragged plumage may induce a distaste for flight. They may feel handicapped in the struggle with their enemies and so remain in seclusion until new feathers have replaced the old. Whatever the reason for the oriole's disappearance we know that for about two weeks during the latter part of July they do not sing in our gardens. I usually hear them again at the end of July or beginning of August.

We have, in St. Lambert, a flock of bronzed grackles that nest in the neighborhood and often visit the garden. I have come to the conclusion that the grackle does considerable damage in gardens, although I have never had the heart to disturb them. For instance, my corn suffered. A year ago I planted it in shallow drills and the blackbirds promptly ate it. This year I planted it so deeply that it rotted in the wet soil. Later, they turned their attention to the peas and ripped open some of the pods. However, I am repaid to some extent by their increasing tameness. They are not greatly addicted to bathing—they merely splash noisily through the water in their course over the lawn. Once my sister called attention to a new bird in the bath. It was merely another grackle, a high plumage male, with an exceptional sheen of bronze and bluish-green on its head and back, in great contrast to some sober colored females nearby.

One of the first signs of a bird movement is the appearance of an occasional downy woodpecker in the garden. I have never seen this bird enter the bath, but have seen individuals clinging to a spruce tree near it and evidently thoroughly enjoying a shower from the garden hose. When in a hurry to discover what birds are in the garden I sometimes arrange the hose so that a fine spray falls over the bath and spruce tree. This quickly attracts most birds and it is much enjoyed by otherwise diffident bathers. I have frequently watched that model of industry, the downy woodpecker, as it examined the spruce tree for larvae, suddenly stop as it reached the arc of the spray, fluff out its feathers and settle down for a bath.

The birds that I usually see next are the redstarts in various plumages—family parties that have nested in the vicinity (they never nest in the garden). The redstart, like most of the warblers, is a great bather. It usually appears between August 5 and 16, and is closely followed by black and white and chestnut-sided warblers. Most of these early comers are still in family parties. The black and white warbler is especially fond of a good bath. I have seen one, with a mixed lot of warblers, settle down in the shallow water and remain for several minutes after

the others had sought a perch to sun and preen themselves.

Last year (1918) the myrtle warbler was the first migrant warbler seen in the garden, arriving on July 31. In 1919 they were first noted on August 10, which is nearer the average time. I can usually find a few in the garden on any day after their arrival until late in October. Occasionally a few remain after the first of November. This bird is the first migrant to come from a distance (referring only to garden visitors). Their nearest nesting haunt that I know of is in the Laurentian hills.

The water-thrush is one of the earliest birds to come, as is also the Canadian warbler. I never see many of the latter, but the water-thrush is a regular visitor. As is well known it is one of our thrush-like warblers, resembling the ovenbird, but lacking the orange crown-patch. It can always be distinguished from the ovenbird by its sew-saw walk, very similar to that of the spotted sandpiper. I seldom see the ovenbird in the garden; it is one of the few of the smaller birds that keeps almost entirely to the woods, but the water-thrush delights in inspecting moist lawns. It is not a great bather, but loves the vicinity of the bath. Even though indoors I usually know of his presence—his loud *clink* or *cleenk* has a very penetrating quality, and I generally come out to watch this daintily marked "tip-up" as he zig-zags down a spruce limb and inspects the wet lawn before taking a light bath. In its summer home the water-thrush lives in the shadows—in the cool wet woods—and in the garden, too, it is more active during the twilight of early morning and late afternoon, and is generally the last to bathe. The sew-saw motion of the water-thrush, and certain other birds, has always excited my curiosity.

The semipalmated sandpiper, almost wholly a bird of the beach (during migration), follows the shore line by little runs and never bobs its body. Continual necessity for rapid action in avoiding the incoming waves may be responsible for this mode of advance. This small sandpiper keeps to the shore level and avoids boulders and other obstacles in its path. On the other hand the spotted and solitary sandpiper and the pipit, when feeding on the beach, generally examine the tops and boulders. It seems probable that similarity in feeding habits is responsible for the bobbing motion common to these three birds. Did the water-thrush acquire its similar motion in a like manner and has it only recently left a water habitat for the woods? Watch a spotted or solitary sandpiper as it flies from stone to stone in the bed of some swift-flowing brook, balances a moment on the polished slippery surface, and creeps to the edge in its search for food

amongst the clinging mosses, and you will readily perceive one reason by which the "tip-up" may have acquired its motion. Even a sandpiper may not relish an unpremeditated ducking. The balancing of the spotted sandpiper is the most pronounced, while the solitary bobs spasmodically, as befits a sandpiper that has adopted the habit of rearing its young in trees, although it has not yet learned the art of nest-building.

Often the bay-breasted warbler is amongst the first arrivals. They are always in flocks and by the time they appear the fall moult is almost if not quite complete. It is difficult to reconcile their fall dress with that of the spring. About the only recognition marks to be distinctly seen are the white wing bars and spots on the outer tail feathers and these marks are common to other species. Here is where the value of the bath is felt. If you look closely you can usually make out a little bay color on the sides, sometimes deepening to chestnut, according to the age or sex of the individual. This will serve to distinguish it from the young of the black-poll which often associates with the bay-breasted and which it resembles closely. I have watched these birds carefully during the past few years and have come to the conclusion that the bay-breasted far outnumbered the black-poll, at least in this district during the fall migration. It is a pretty sight to see the bright yellowish-green backs of half a dozen or more of these birds as they bathe in perfect harmony. The bay-breasted warbler comes early and remains late and is one of the most common fall garden visitors. In 1919 they were noted from August 20 until September 21.

The Cape May, Magnolia, Nashville, and Tennessee warblers follow more or less closely. It seems almost unreal to see a Tennessee warbler composedly bathing a few feet away. It is quite a contrast to watching them in their nesting haunts where they seldom approach closer to you than the tip of some dead bleached limb, fifty feet or more from the ground. Then the male bird's breast feathers were a dazzling white, now they are a dusky yellow or yellowish-white.

On Aug. 10 this year I saw the first white-throated sparrow in the garden, but they did not become common until the second week in September. They were always to be seen from that time until late in October. Most of the sparrows are fond of bathing, but are not as energetic about it as the warblers.

Vireos are much less given to bathing. They are usually content to perch beneath the spray and allow the mist to fall over them. Often they will dive through it and occasionally take a proper dip in the bath. The red-eyed vireo is found in the garden

throughout the summer, sometimes until October. The warbling vireo is less common, while the solitary and Philadelphia are rare visitors. I have only one record for the latter—August 11 (1918). It is a beautiful little bird, much smaller than the red-eyed vireo, and with a great deal of greenish-yellow in its make-up. I watched it glide along the elm twigs until it seemed a part of the foliage and melted from view. The pursuit of its prey—the small hairless caterpillars, lying inactive in the curled-up elm leaves—called for a smooth, unhurried progress. These caterpillars are very attractive to other vireos and especially to the Baltimore oriole.

Flycatchers act much like vireos toward the bath. The wood peewee takes an occasional bath, but more often simply flies from perch to perch, back and forth through the spray. It is loath to remain long away from its beloved perch. Dabbling in a bath gives opportunity neither to flip its tail nor snap up passing insects.

Another speedy bather is the ruby-throated hummingbird. I have never seen it do more than dive through the spray at the usual rapid gait. The ruby-throat is a color specialist. I have not known it to nest in the garden, but it often visits us during August and September—even as late as Sept. 14; it is generally found about flowers of a reddish hue. Sometimes late flowering scarlet runners are its objective; again the orange lily is chosen.

This brings us well into September. The yellow warbler has gone entirely. It disappears suddenly and very regularly about the end of August or during the first few days of September. As we are near the northern limit of this warbler's range in the east, there are few arrivals from the north to take the place of departing local birds.

The Maryland Yellow-throat is liable to visit the shrubbery at any time in September, but that is as far as it gets. I have never seen one bathe. Although August (in the garden) is essentially a warbler month, there are a few of them that I generally fail to see before September—such as the black-throated blue, black-throated green, and yellow palm warblers. They stay here quite late but the myrtle outcrops and outstays them all.

If August is a warbler month, then September might be called a sparrow and thrush month. Besides the robin and bluebird I have seen four of the true thrushes in my garden—Wilson's, olive-backed, gray-checked, and hermit—and all but the gray-checked bathed. The robin and the olive-backed thrush are especially fond of a bath and they bathe very thoroughly. The true thrushes are mild-mannered, but the robin finds the bath all too small to permit of mixed bathing, and generally chases

other birds away. Some of them are discouraged for a time, but not so with the song sparrow. I have often watched this persistent little fellow dodging in and out, looking for an opening, until the larger birds finally vacated the bath.

The robin has a far northern range, which is indicated by repeated influxes during September and October. One may fail to see them for a time and then some morning the lawn will be dotted with them. The lawn is the robin's market-place. I watched an amusing incident one day. A robin had just pulled a worm from its retreat and landed it safely on the ground when another robin darted up and seized it. It was amusing to see the wild chase that followed.

The white-crowned sparrow usually arrives about Sept. 18, and can often be heard singing a low-voiced song. Never a boisterous singer, its fall song is especially subdued. Most of the sparrows are now in the midst of a song revival, but the songs are usually incomplete and faintly uttered; sometimes a mere whisper of the spring song, and at other times quite different from it. As the weather becomes cooler the song often changes in volume and quality until frequently the full spring song is uttered.

Many birds sing but a portion of the mating song. The Tennessee warbler, for instance, gives only about half of its full song, but it can always be recognized by the piercing insistence of the climax note. Little appears to be known as to what proportion of these unfinished songs is the product of mature and immature birds. Much might be learned in regard to subspecific relations from a study of immature birds' songs.

About the time of the white-crown's arrival there is an influx of chipping sparrows from the north, and the purple finch is liable to visit the garden at any time in September. Both of these birds are fond of a bath. Red-breasted nuthatches are seen about Sept. 16, closely followed by the brown creeper, ruby-crowned kinglet, and an occasional winter wren. I have only once seen the winter wren bathe and it scolded all of the time. The creeper is the busiest bird I have ever seen. It is incessantly on the hunt for its daily bread and must consume an immense amount of insect eggs and larvae. Up to the top of one tree and away to the foot of another, there is always another tree and never time for a bath. It does not relax even to sing; it is noted for its lack of song. I have heard it but once, curiously enough not in the depths of its woodland home, but in a garden on the main street of St. Lambert, during a drizzling rain—a very sweet song that took me some time to locate, owing to the ventriloquial qual-

ity of the creeper's voice and the bark-like appearance of its plumage.

September finishes with an occasional visit from a yellow-bellied sapsucker or blue jay and the arrival of the first batch of slate-colored juncos. The jays never linger long, merely alight on the tops of the elms and away again. These elms offer an attractive resting place for birds of the open country. Once a sparrow hawk perched there; an occasional crow is seen in early morning, and meadowlarks often sing from the tip-top foliage. Red-winged blackbirds, too, sometimes rest there; once I saw one of them bathe.

About the beginning of October bands of restless golden-crowned kinglets visit the apple and cherry trees, as well as the evergreens, while an occasional white-breasted nuthatch prefers to examine the bark of the elms. A little later the black-capped chickadees come and tell me that migration is rapidly waning. Though there are a few finches and others still in the garden, October is essentially a chickadee-kinglet month.

The chickadees are the gleaners that follow in the wake of the earlier hosts of insect hunters. They are always followers rather than leaders. Their progress must need be slow if they would hunt out all of the tiny stages of insects that the others have overlooked in their haste. I sometimes wonder that there is an insect astute enough to hide its progeny from that army of keenly peering eyes. It seems to me that, not only each tree, but each twig and leaf is examined many, many, times.

The hermit thrush is more commonly seen now. On Oct. 13, 1919, at dawn I saw one taking a bath, or rather, I heard him in a varied repertoire as it was scarcely light enough to see him distinctly. First he gave his usual *chuch*, followed by a whistled *pheu*, and then that nasal *n'yea*, that the Wilson's thrush delights in, and finally he sang in an extremely subdued tone. I had not been making a daily practice of arising at dawn but, heartened by hearing the hermit sing, I tried it again the following morning and saw a bird new to the garden, a fox sparrow, having a royal time all to itself in the bath and splashing noisily. At first I thought it another hermit, but the whir of the wings as it splashed spelt fox sparrow, and as it grew lighter I saw it distinctly—the first of this species I had seen in the garden.

Towards the end of October, pine siskins, redpolls, and tree sparrows pay brief visits to the garden, and still later possibly grosbeaks and waxwings, but the bathing season is over. It is cold now and the birds do not feel the need of it. The indomitable song sparrow is still here in small numbers, and a few white-throats, juncos, and robins, but the bulk has gone.

November is mainly a chickadee month. What other birds there are have mostly retreated to the shelter of the woods.

A list of the birds observed to actually rest in my garden, save two species, the saw-whet and the screech owl, which were plainly heard but not seen, is given below. Those designated by an asterisk used the bath, while several others were content with the spray. I have made no mention of birds seen passing overhead, such as swallows, swifts, nighthawks, and others. The lot on which these notes were made is situated in the town of St. Lambert (opposite Montreal), a quarter of a mile from the river shore. This lot is about one hundred feet square and contains lawn and garden with apple, cherry, ash, maple, elm, cedar and spruce trees. A favorable feature is a thicket of hawthorn and wild cherry in an adjoining lot.

The list follows: sparrow hawk; screech and saw-whet owl; hairy and downy woodpecker; yellow-bellied sapsucker; flicker; ruby-throated hummingbird; *wood peewee; *least flycatcher; *phoebe; kingbird; crow; blue jay; *bronze grackle; *red-winged blackbird; cowbird; *Baltimore oriole; meadowlark; evening grosbeak; pine grosbeak; redpoll; *purple finch; *goldfinch; *domestic sparrow; *song, *white-throated, *white-crowned, *chipping, *fox, and tree sparrows; *slate-colored junco; *black and white, *black-poll, *bay-breasted, *black-throated blue, *black-throated green, *Cape May, *yellow, *yellow palm, *Tennessee, *Nashville, *chestnut-sided, *myrtle, *magnolia, and Canadian warblers; yellow-throat, *redstart, ovenbird, and *water-thrush; *red-eyed, solitary, Philadelphia, and warbling vireos; *catbird; ruby-crowned, and golden-crowned kinglets; *red-breasted, and white-breasted nuthatches; black-capped chickadee; brown-creeper; house, and *winter wrens; *Wilson's, gray-cheeked, *olive-backed, and *hermit thrushes; *robin; and bluebird.



THE RHOPALOCERA, OR BUTTERFLIES, OF HATLEY,
STANSTEAD COUNTY, QUEBEC, 1919.

BY H. MOUSLEY.

In January of 1840 there was published in London a book entitled, "The Canadian Naturalist," written by P. H. Gosse, who afterwards became a Fellow of the Royal Society, and a well known author of works pertaining to invertebrate zoology. Gosse who was born in 1810, came to reside at Compton, a village some seven miles to the north-east of Hatley in 1835, and remained there for about three years. During that time he wrote the above book, which contains probably the first and only general account of the Rhopalocera and Heterocera of this district.

Of the first named I find there are twenty-five species and forms enumerated in the work. Of this number I have to-day verified twenty-three, besides adding another twenty, thus making a total in all of forty-five to the present day, certainly not a very large proportion of the six hundred or more species to be found in North America, north of the Gulf of Mexico and the Rio Grande. Hatley, therefore, cannot be said to be nearly so rich in butterflies as it is in birds, for of the latter I have already recorded one hundred and seventy-five species, or nearly one quarter of all those known to inhabit the United States and Canada. Before proceeding further, however, it may be well to state that my data regarding the butterflies has been gathered casually during the past nine years, whilst pursuing my favorite study of ornithology, and therefore the list does not profess to be final in any way, but may serve as a basis for further systematic work. Of the nine seasons referred to, the present one (1919) has been by far the most prolific, many species such as the Great Spangled and Silver-spot Fritillaries literally swarming, whilst the Yellow-spot and Tawny-edged skippers appeared in myriads, it being almost impossible to walk anywhere without putting them up in clouds. Apparently a similar state of things existed eighty years ago, for Gosse in his "The Canadian Naturalist," 1840, p. 228, says, "Among the clover blossoms, hundreds of little skippers are dancing in their peculiar jerking way from flower to flower. The Yellow-spot (*Pamphila peckius*) is abundant, and another species much resembling it, the Tawny-edged skipper (*Pamphila cernes*)." Other species such as the Red Admiral, Hunter's Butterfly and most of the Graptas (now genus *Polytonia*), were more numerous than usual, the hot, and for the most part humid weather of June and July, no doubt, accounting

for this extra abundance. In seeming contrast to this profusion, however, might be noticed the unusual scarcity of the Black Swallow-tail, as well as the total absence of the Monarch, both of these species being as a rule fairly plentiful.

The country around Hatley is of an undulating character, the village itself standing at an elevation of 1,000 feet above the sea level, with Lake Massawippi, a fine sheet of water, nine miles in length, and about one mile in width, lying on the western side. It is between this lake and the village, that most of my records have been made, and I know of no species on the eastern side of the village, that cannot be found on the western, although a few are somewhat more abundant on the former side.

Of the nine families of butterflies represented in the United States and Canada, namely, Papilionidæ, Pieridæ, Danaidæ, Satyridæ, Nymphalidæ, Lybtheidæ, Riodinidæ, Lycaenidæ and Hesperidæ, all but two have been found at Hatley, the missing families being Lybtheidæ and Riodinidæ.

The Nymphalidæ or "Brush-footed Butterflies," the largest of all the families of butterflies, is also the best represented here with twenty species, then follows the Hesperidæ or "Skippers," with nine, the Lycaenidæ or "Blues," "Coppers," and "Hair-streaks," with six, and the remaining four families with ten representatives. Most of these species are to be found generally distributed and in fair numbers, but there are some that seem to call for special remarks, and I propose to deal with these, in the order in which they appear in the latest check list.

THE BLACK SWALLOW-TAIL, *Papilio polyxenes* Fabr. In view of the general abundance of this species in most seasons, it is interesting to note what Gosse says about it in his "The Canadian Naturalist," 1840, p. 184: "Another species, the Black Swallow-tail (*Papilio asterius*), is likewise found in Newfoundland and the Southern States, in both of which I have found it numerous, and I have seen it mentioned in lists of New England insects, yet I have not met with it in this province. I should suppose, however, that it is a native, but probably, as in Newfoundland, only appears plentifully in particular seasons." Considering that Gosse lived three years at Compton, we can only come to the conclusion, that he could hardly have passed it over, if it had been there in those days, for he records another of the same genus, the Tiger Swallow-tail, as being plentiful.

THE CABBAGE BUTTERFLY, *Pieris rapae* Linn. I never go into my garden and see a host of these butterflies flying about the cabbages, without thinking of the halcyon days that must have existed in Gosse's time, for he does not record this greatest of pests, although he mentions the Grey-veined White. Surely the march of civilization brings a trail of evils in its wake!

THE CLOUDED SULPHUR, *Eurymus philodice* Godt. This is a very common and well distributed species, being more plentiful, however, in some seasons, than in others. It is fond of congregating on moist places, especially on roads, where I have seen as many as fifty gathered together so closely, as to be almost touching one another. There are at least two broods, the first appearing in May, and the second in August, my dates for fresh examples ranging from May 15, to as late as Oct. 27. They vary considerably in size, several of the second brood especially, being merely dwarfs, whilst many of the females are albinos, but I have never come across a melanic form of the male as yet.

THE PEARLY EYE, *Enodia portlandia* Fabr. I only came across this species in 1918, and then only two examples were met with, one on July 31, and the other on Sept. 3. In the following year, conditions were evidently similar, for I only saw four examples between July 12 and 17, so that it is evidently an uncommon species here. In "The Canadian Naturalist," Gosse, 1840, p. 246, there is an illustration of it drawn by the author himself, who speaks of it as a rarity here in those days, although plentiful in the Southern States.

THE CLOUDED WOOD-NYPH, *Cercyonis alope* form *nephele*: Kirby. Probably the present exceptionally humid season, may have been responsible for my finding two male examples of this dimorphic variety of *Cercyonis alope*, showing rather more yellow on the fore wings than is quite typical, in fact a mild compromise between *nephele* and *alope*.

HARRIS' CHECKER-SPOT, *Melitaea harrisi* Scud. Of the smaller crescent-spots this apparently is the rarest, there being only one meadow where I have taken it so far, and even there it seems to be very scarce, only one specimen being seen in 1918, and none during the present prolific season of 1919.

NYCTEIS, *Phyciodes nycteis* Dbl. and Hew. As this little butterfly may be mistaken on the wing for *Melitaea harrisi*, with which it is often found flying, it is not so easy to define its exact status here, but so far as my experience goes, I have found it next to Harris' Checker-spot, to be the rarest of the smaller crescent-spots. I only came across one example in 1917, none in 1918, and only five during the present season.

THE VIOLET TIP, *Polygonia interrogationis* Fabr. Of the genus *Polygonia*, this is certainly the rarest species here, for I have only come across it this season (1919), and then only three examples have been noted, as against large numbers of *P. comma* and *P. progne*.

THE GREEN COMMA, *Polygonia faunus* Edw. Of the four Graptas (now genus *Polygonia*) mentioned by Gosse, this is the only one that I have been unable to verify so far, which seems somewhat strange, in view of the fact that the present season (1919), has been an exceptionally good one for the other members of this interesting genus.

THE COMPTON TORTOISE, *Aglais j-album* Bdv. and Lec. This large and handsome butterfly, although having a wide range, is more or less uncommon everywhere, and its numbers at Hatley of late years, seem to be on the decrease if anything, although in July, 1911, it was quite common on the "meadow road" to the east of the village, which at that time was bordered by willow trees (on which the larvæ feed) most of which, however, have since been cut down. Apparently there are two forms of the underside, one dark and the other light, but probably this difference is only sexual, the males being the brighter colored.

HUNTER'S BUTTERFLY, *Vanessa virginiensis* Dru. Until the year 1918, I had always looked upon this handsome butterfly as being particularly scarce here, but during June, August and September, quite a number of specimens were observed, probably owing to its being a good year for the species, the same as 1911 was for *Aglais j-album*. The hot summer of 1919 seems to have suited it also, for its numbers have been even greater than in the previous year. Gosse does not record it in his work, nor yet the still more showy Red Admiral.

THE PAINTED LADY, *Vanessa cardui* Linn. Apparently this is an uncommon, if not a somewhat rare butterfly here, as I have never come across it until the present year (1919), and then only four examples have been noted, one on Aug. 7, and the other three at the end of September.

THE BANDED PURPLE, *Basilarchia arthemis* Dru. This beautiful butterfly is fairly well distributed, and may be found from about June 11 to the middle of July, although I have seen worn specimens at the end of the latter month. Gosse in "The Canadian Naturalist," 1840, p. 306, however, records an example as late as September 4, which he concludes was only an occasional straggler, or one of an unusual late hatching.

THE VICEROY, *Basilarchia archippus* Cram. This handsome butterfly mimics the Monarch (*Danaus archippus* Fab.), and is one of the most striking cases of mimicry, which occurs in our fauna. It is by no

means plentiful here, only very few examples having been met with each season, and these for the most part on the roadside. During the present exceptional season (1919), I have only seen it once, on Aug. 7.

THE ACADIAN HAIR-STREAK, *Strymon acadica* Edw. Prior to the present year (1919) this was the only hair-streak I had met with at Hatley. I first found it in 1914 on the roadside, about two miles to the south of the village, but only in very limited numbers. From that date onwards I lost sight of it until July of the present year (1919), when I found it again in the same locality, but in rather increased numbers.

THE STRIPED HAIR-STREAK, *Strymon liparops* Bdv. and Lec. This is generally considered a somewhat rare little butterfly wherever it occurs, which remark is certainly true of it at Hatley, for I have never seen it until the present season (1919), and then only in two or three places, along the same roadside that the Acadian Hair-streak frequented. The two species were flying together, from about July 9-14 in about equal limited numbers.

THE WANDERER, *Feniseca tarquinius* Fabr. This apparently is another rare little butterfly here, for I have only come across two specimens of it so far, one on June 8, 1917, and the other on May 25, 1918. Only one species of the genus is known. While it is true that almost all the larvae of lepidoptera subsist upon vegetable food, nevertheless there are exceptions, one of which is the present species, whose slug-like larvae feed upon the woolly aphid of the alder.

THE SPRING AZURE, *Lycaenopsis pseudargiolus* form *marginata* Edw. Prior to the spring of 1919, I had only come across the form *marginata*, of this very polymorphic species, although Gosse in "The Canadian Naturalist," 1840, p. 123, speaks of it as *Polyommatus lucia*, by which it might be assumed he refers to the form *lucia* Kirby, and was unacquainted with *marginata*. Both *lucia* and *marginata* are winter forms, coming from chrysalids which have lived through the winter and are the first to appear in early spring. As already indicated, I have found *marginata* to be by far the commonest form, two examples only of *lucia* having been taken in May of the present year, 1919.

THE BLACK SKIPPER (*Thymele brizo*?) This name was used by Gosse on page 184 of his work. The reference may possibly be referable to the Sleepy Dusky-wing (*Thanaos brizo* Bdv. and Lec.), although the note of interrogation might allow of its being placed under *Thanaos icelus* Lint. (The Dreamy Dusk-wing), which latter I have found to be not uncommon here, whereas *brizo* is out of its habitat.

THE ARCTIC SKIPPER, *Carterocephalus palaemon* Pall. This little skipper, which is totally unlike any other species in the fauna, is described by Gosse in "The Canadian Naturalist," 1840, p. 219, as very rare near Compton, and I had held a similar view regarding it at Hatley, until June 4, 1918, when I first came across it in an open space in the centre of a little swampy wood, about a mile or rather more, to the north of the village. Later on I found it in some marshy ground, adjoining the meadow road to the east of the village, and in several other places as well. It seems strange I should never have come across it before, unless the above year was an exceptional one for the species, which I think it must have been, seeing that I have failed to come across it again during the present season (1919), (which might be described as a "skipper" year), when all the other members of the family have been unusually abundant.

THE LONG-DASH, *Polites mystic* Scud. So far I am unable to say very much about this skipper, having only come across it for the first time during the present season (1919). In point of numbers, however, it was nothing to be compared with those of the smaller members of the genus, such as the Yellow-spot and Tawney-edged skippers, besides which its distribution seemed much more restricted.

THE DUN SKIPPER, *Euphyes vestris* Bdv. This is another skipper whose presence was undetected until the present year, and looking to the general difficulty of capture, and identification in the field, I think this family probably offers more scope for additions to the Hatley list, than any other. As with the Long-dash, I am unable to say very much about its status, except that its distribution was more restricted, and numbers even less, than those of the former.

Possibly the remark in my paper on the Orchids of Hatley (OTTAWA NATURALIST, Vol. XXXII, 1919, No. 8, pp. 144-147) that the possibilities of the place had only been touched upon, so far as regards those lovely flowers, may apply equally well here to the butterflies, and that before long others will be found able and willing to extend the following list, the nomenclature of which is the same as that used by Barnes and McDunnough in their Check List of the Lepidoptera of Boreal America.

LIST OF THE BUTTERFLIES OF HATLEY, 1919.

PAPILIONIDAE.

- *The Black Swallow-tail, *Papilio polyxenes* Fabr.
- The Tiger Swallow-tail, *Papilio glaucus canadensis* R. and J.

PIERIDAE.

- The Grey-veined White, *Pieris napi* Linn.
- *The Cabbage Butterfly, *Pieris rapae* Linn.
- The Clouded Sulphur, *Euryma philodice* Godt.

DANAIDAE.

The Monarch, *Danaus archippus* Fabr.

SATYRIDAE.

The Pearly Eye, *Enodia portlandia* Fabr.

*The Little Wood-satyr, *Cissio eurytus* Fabr.

The Eyed Brown, *Satyroides canthus* Linn.

*The Clouded Wood-nymph, *Cercyonis alope* form *nephele* Kirby.

NYMPHALIDAE.

The Great Spangled Fritillary, *Argynnis cybele* Fabr.

The Silver-spot Fritillary, *Argynnis aphrodite* Fabr.

The Silver Bordered Fritillary, *Brenthis myrina* Cram.

*Meadow Fritillary, *Brenthis bellona* Fabr.

The Baltimore, *Euphydryas phaeton* Dru.

*Harris' Checker-spot, *Melitaea harris* Scud.

*Nycteis, *Phyciodes nycteis* Dbl. and Hew.

The Pearl Crescent, *Phyciodes tharos* Dru.

The Violet Tip, *Polygonia interrogationis* Fabr.

Hop-merchant, *Polygonia comma* form *dryas* Edw.

**The Green Comma, *Polygonia faunus* Edw.

The Gray Comma, *Polygonia progné* Cram.

The Compton Tortoise, *Aglais j-album* Bdv. and Lec.

The American Tortoise-shell, *Aglais milberti* Godt.

The Mourning Cloak, *Aglais antiopa* Linn.

*The Red Admiral, *Vanessa atalanta* Linn.

*Hunter's Butterfly, *Vanessa virginiensis* Dru.

*The Painted Lady, *Vanessa cardui* Linn.

The Banded Purple, *Basilarchia arthemis* Dru.

*The Viceroy, *Basilarchia archippus* Cram.

LYCAENIDAE.

*The Acadian Hair-streak, *Strymon acadica* Edw.

*The Striped Hair-streak, *Strymon liparops* Bdv. and Lec.

*The Wanderer, *Feniseca arquinius* Fabr.

The American Copper, *Heodes hypophlaea* Bdv.

The Spring Azure, *Lycaenopsis pseudargiolus* form *marginata* Edw.* and form *lucia* Kirby.

HESPERIIDAE.

*The Northern Dusky-wing, *Cocceius pylades* Scud.

*The Dreamy Dusky-wing, *Thanaos icelus* Lint.

**The Black Skipper (*Thymele brizo?*)

The Arctic Skipper, *Carterocephalus palaemon* Pall.

The Tawny-edged Skipper, *Polites cornes* Bdv. and Lec.

*The Long-dash, *Polites mystic* Scud.

The Yellow Spot, *Polites peckius* Kirby.

*The Hobomok Skipper, *Poanes hobomok* Harris.

*The Dun Skipper, *Euphyes vestris* Bdv.

*Not recorded by Gosse.

**Recorded by Gosse but not yet verified.

A RARE FUNGUS NEW TO CANADA

BY W. S. ODELL.

While collecting fungi in the vicinity of Ottawa during the past year, for the Victoria Memorial Museum, one of the earliest forms found was the edible morel, *Morchella esculenta* Pers. Shortly after snow had left the ground and before leaves appeared on the trees and shrubs, its dark olive green or brownish cone was seen protruding a few inches above ground. It is fairly common, growing usually in damp situations, and lasts during May and part of June if the weather is favorable. Any one who has seen this peculiar fungus will remember and readily recognize it. It belongs to the order Ascomycetes, family Helvellaceae, and differs from mushrooms, puff balls, etc., in the manner in which its spores are borne. In mushrooms the reproductive bodies called spores, are borne, four in number, on ends of club-shaped bodies called basidia, covering both sides of the gills. The spores which are the seeds of the mushroom, are of various sizes; they are microscopic, but may be seen en masse by placing a specimen on black paper, tightly covered

with a glass jar to prevent air currents. After a few hours the paper will be covered with a whitish deposit, which consists of spores in inconceivable numbers. Spores are dispersed by the wind; some fall to the ground, and in process of time, it may be months, often years, produce under proper conditions, tiny thread-like jointed strands called "spawn" by gardeners, which grow through the substance on which the plant feeds. A familiar form occurs in white mould often seen on vegetables or on bread, and is better known as mycelium. It may be found by digging up young mushrooms or under matted leaves or in much decayed logs in the woods, permeating every part. In fact the mycelium is mainly responsible for the rapid decay of wood, and causes much loss annually to standing timber.

While in the form of threads mycelium is the vegetative stage of the mushroom. When the fruiting stage begins, small knobs appear on these strands, minute at first, varying from the size of a pinhead

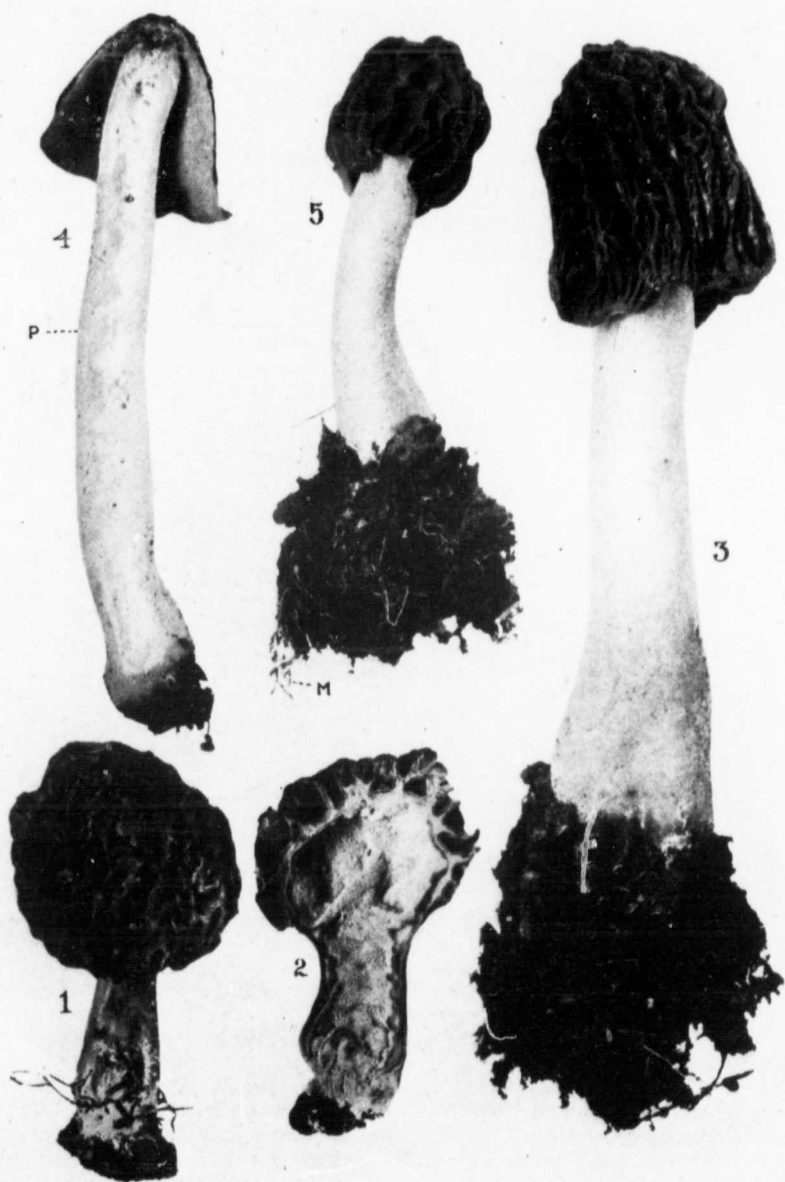


Fig. 1. *Morechella esculenta*: 2. *Morechella esculenta*, section; 3. *Morechella bispora*: 4. *Morechella bispora*, showing partitions (P); 5. *Morechella bispora*, showing mycelium (M).

to that of a pea, growing larger all the while, making their way to the surface of the ground, when if conditions are favorable mushrooms will mature in a short time.

The cap or pileus of a mushroom is the expanded part; on its under side are gills or lamellae, thin plates radiating from the stem or margin of the pileus, affording a foundation on which club-shaped cells stand parallel to each other. The entire surface of the lamellae is covered with these cells, called basidia.

In Ascomycetes, including morels, the distinctive feature consists of spores enclosed in a long cylindrical tube or ascus. Like mushrooms, morels consist of two prominent parts, stem or stipe, and cap or pileus; but are very unlike them in general appearance. The pileus varies much in form being conical, ovate, rounded, bell-shaped, or cylindrical, and is always pitted. These depressions are usually regular, covering the entire outer surface, and are separated from each other by ridges with rounded blunt edges, thus forming a network assuming a honeycombed appearance.

Unlike mushrooms, the upper or exterior surface is the spore bearing part in morels, and spore sacs are developed on both ridges and depressions. The pileus is hollow, closed at the apex, and attached throughout its length to the sides of the stipe. In color it varies from shades of olive, to greenish brown, and light ochre yellow. Its stipe is hollow and continuous with the cavity of the pileus. It is stout, smooth, but covered with minute granular particles, and varies from $\frac{1}{2}$ to 1 inch in diameter. Its spores as before mentioned contained in an ascus, are smooth, hyaline, elliptical, standing obliquely, eight in a continuous row, varying in size from 19 to 22 microns long by 11 microns wide. The plant is from 2 to 4 inches high, but is often found larger.

The rare species referred to in the title of this article, namely *Morchella bispora* Sor., or the Two-spored morel, is a morel somewhat similar to the one described, but unlike it in several distinctive characteristics. Its surface is reticulated, with ridges running in a more regular longitudinal manner, and differs in having its pileus free from stipe along lower margin, but is attached to it at its apex. Its main difference, however, lies in the fact that its ascus contains only two exceedingly long spores, while all other morels have eight. The pileus is dark greenish brown in color, 1 to $1\frac{1}{2}$ inches long by 1 to $1\frac{3}{4}$ inches wide. Its stipe is stuffed with a pithy substance, at intervals of one-half inch, forming partitions, leaving hollow spaces between. It is cylindrical, very fragile, tapering to apex, straight, often slightly curved, easily separating from pileus, having base covered with a thick floccose substance

readily rubbed off. In size it is from 4 to 5 inches long, and from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch thick, at widest part. Its spores are cream or light yellow, faintly granular, two in an ascus, often slightly curved, fairly uniform in width, exceedingly variable in length. They are narrowly-oblong, size 52-62 microns long by 14 to 17 microns wide.

Morchella bispora grows singly, under open hardwood trees, in rocky soil, among leaves; height from 4 to 6 inches. A few plants were found in Gilmour's grove, Chelsea, Que.; two in Armstrong's bush near Green's creek, and six in Billings' bush, both of these latter localities being in the province of Ontario, near Ottawa. After May 15, no more specimens were seen. Possibly if the surrounding woods were systematically searched in early spring, the range of its habitat might be extended. Considerable interest is attached to this species partly on account of its rarity, but mainly

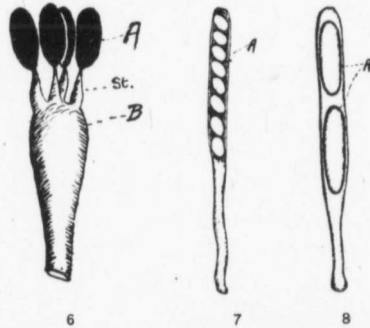


Fig. 6. Basidium of *Coprinus comatus* (A, spores; st., sterigmata; B, basidium); 7, ascus of *Morchella esculenta* (A, spores); 8, ascus of *Morchella bispora* (A, spores). All highly magnified.

because there is no record of its having been previously found in Canada.

All morels are edible, and in the writer's estimation surpass all other kinds of mushrooms, as a choice article of diet. They are not found in large numbers in the district of Ottawa, but are general around suburbs of the city in such places as the edges of woods, in grass, and in shady places. They have been found at Rockcliffe, at the Rifle Range, Experimental Farm, High Bridge over Rideau river, Wychwood, Lake Flora, and in the woods south of Lemay's lake.

There seems to be a popular misconception regarding the food value of mushrooms. From articles appearing in newspapers, one would be led to infer that their food value is high—that they could take the place of our staple foods, wheat, beans, flour or meat. Investigation proves that their edible value is not so high as is supposed. Careful analyses have been made of many species, and while there is con-

siderable variation in composition, the average is 85 to 90 per cent water and 10 per cent solid matter. In *Morchella esculenta* it is 89.54 per cent water, 10.46 solid matter; in the cultivated mushroom, *Agaricus campestris*, 91.8 per cent water, 8.2 per cent solid matter. This would place them on a par with cabbages and turnips, which are not generally considered as being highly nutritious.

Large quantities of edible mushrooms go to waste every summer. This is to be regretted since they are easily accessible. While some mushrooms have

an indifferent taste, most are of fine flavor, and would repay the trouble taken in collecting them. If their value as a delicacy were more generally known, sufficient numbers could be found all through summer, at the cost of a little exertion, to furnish an appetizing relish for many a meal.

Thanks are due to the late Mr. J. M. Macoun, Botanist of the Victoria Memorial Museum, for the photographs from which the accompanying plate has been made and to Prof. John Dearness, London, Ont., for identification of specimens.

A FABLE OF TO-DAY.

BY RALF RANGER.

Once upon a time there was an Old Naturalist. He was quite a good Old Naturalist too, and if you look in many of the books you will find many observations and the results of interesting and important investigations credited to him, and not a few monographs bear his name as author.

After some further years of work this Old Naturalist was about to write a book dealing with a good many different forms of animal life. One day he went up to a big museum and introduced himself to Mr. Flittin Nomen, the young expert in charge of the ornithological section.

"Ah, yes, sir," said Mr. Flittin Nomen, "I am extremely glad to meet you. I have always admired your monograph on *Planesticus migratorius*."

"Pardon me, but I could not have been the author of the work you refer to. I do not even know the species of which you speak."

"Yes, yes, but I mean your monograph on the American Robin."

"Oh, the American Robin. But is not the name *Merula migratoria*?"

"It has not been called *Merula migratoria* for a long, long time, for four years at the very least," said Mr. Flittin Nomen. "Your account of the habits of *Dendroica fusca*, too, I have always held in very high esteem."

"*Dendroica fusca*? I thought that I knew the genus *Dendroica* pretty well, but I know of no such species."

"It used to be called *Dendroica blackburniae*, but not for a long time, not for the last three years certainly. And you know," said Mr. Flittin Nomen, his eyes brightening, "it is really not worth your while learning the name *fusca* for this species, for I have recently made a great discovery—I have found that the specific name *alba* really has priority. That is the name used in the work published a week before the publication of *fusca* and consequently—"

"But this species is not *white*" exclaimed the Old Naturalist.

"Oh, that doesn't matter a bit, *alba* has priority by a *whole week*—think of that! It took me a long time, and much very careful research, to make sure of the exact week of publication of the two works, but I have confirmed it, and am proud to say that I have thus been able to make a very valuable contribution to science. I know that in the old days it was supposed that a scientific name should be in some degree descriptive of the species, or at least should not be entirely misleading in its significance, but that idea is now entirely out of fashion. *Alba* is undoubtedly a *lapsus calmi*, but that doesn't matter either, it has priority, and *that's the thing*."

"But is there no such thing as a nomen conservanda, thus allowing a name which has become thoroughly established to remain?"

"I believe there used to be, in ancient times, but such absurd ideas are entirely out of date."

The Old Naturalist turned to go.

"So very glad to have met you," said Mr. Flittin Nomen, "and I can give you a bit of advance information. I believe that I can prove that *Melospiza* is untenable for the Song Sparrows, and it should be *Rubraspizella*. It's really a very good job too, for they have been *Melospiza* long enough."

"Truly, 'the letter of the law and not the spirit'," murmured the Old Naturalist as he wandered off in the direction of the entomological section.

In the entomological section the Old Naturalist met the expert in charge, Dr. Changem Offen, and tried to converse with him, but as all the names the Old Naturalist used had to be dug up in a list of synonyms, there was little time left for discussion of life-histories, habits, habitats, economic status, and other points in which the Old Naturalist was interested, but which Dr. Changem Offen seemed to regard as of very secondary importance.

The Old Naturalist wandered on to the mammalogical section. Here he found the curator contemplating a tray of skins of the genus *Microtus*, while on the table lay a single specimen. After introducing himself, he enquired as to the identity of the specimen on the table.

"I don't know what it is," said the curator. "In fact, I am afraid it is impossible to say. You see it has lost its label, and without the locality I am entirely unable to say to what subspecies it belongs."

"But, if you cannot tell what it is without a locality label, it can hardly be worth bothering about," said the Old Naturalist.

"Oh, yes, indeed yes. That's not the point at all. If any two mammals come from different localities they *must* belong to different subspecies, whether we can see the differences or not, and we're all right, quite all right, as long as we have the labels."

"I thought that subspecies were named to facilitate reference, caused by climatic conditions, and that their chief interest lay in correlating these differences with the conditions under which they were produced."

"That, I know, used to be the old idea, but we have got far beyond that now, and we know that subspecies exist for each locality. It is a great improvement on the old method and quite simple as long as we have the labels."

The Old Naturalist left the curator hunting for his lost label, and proceeded to the botanical section. Here he introduced himself to Dr. Synn O'Nymm Seeker, Chief Taxonomist of the Order Rosales.

"I used at one time," said the Old Naturalist, "to be interested in the genus *Crataegus*. What is the situation in that genus at the present time?"

"The genus *Crataegus*?" exclaimed Dr. Synn O'Nymm Seeker, "why my dear sir, there is no such genus. It was discovered long ago that each of the old species of that so-called genus was really a separate genus, and that each of these separate genera had from fifty to a hundred species. But even this point of view is now obsolete, as Professor Splittem Finer has just found that every individual hawthorn is a distinct species and he is now engaged in the momentous task of going over the whole of North America tagging every tree with its own specific name."

The Old Naturalist turned sadly away. Poor old out-of-date chap! He returned to his home, spent the rest of his life in trying to catch up with a synonymy which got away from him in one group while he was working at another, and in trying in vain to find some rhyme or reason in the mass of published subspecies. So he wore himself out and died—and never wrote his book.

I remember the Old Naturalist well. He was a good worker and a progressive. He would have done even more practical field work if his time had not been so largely taken up in controversy with the conservatives of his day. However, we owe him a larger debt of gratitude than is generally realized. It was largely due to him a code of nomenclature was established which ended the existing practice whereby each individual crank was a law unto himself, the confusions from which we are only just straightening out to-day. He had a caustic pen too. His papers on *Turdus* vs. *Merula* in the old numbers of *Ornithologica* are classics of sarcasm and irony, and well worth occasional re-reading.

P. A. T.

NOTES ON THE NESTING HABITS AND FOOD OF PRAIRIE HORNED-LARKS IN MANITOBA.

BY NORMAN CRIDDLE, THEESBANK, MAN.

The notes presented below are largely from observations made during the spring of 1918, and owe their origin to the fact that I was unable, at that time, owing to ill-health, to devote my attention to the more strenuous work which usually falls to the lot of a field officer of the Dominion entomological service. As it happened, the horned-larks were nesting close at hand and, therefore, presented opportunity for study without fatigue to the observer.

The horned-larks of Manitoba have already been dealt with in this journal,* but as the present notes

add to what was previously written they seem worthy of record here.

Prairie horned-larks are the first birds to return to their summer homes from the south; they are usually with us in numbers by March 1 and at the end of that month are, as a rule, busily engaged in incubating a clutch of eggs. My 1918 records read somewhat as follows: April 18, young birds almost able to fly; April 30, young flying; May 3, nest with 3 eggs; young from this nest left on May 26. May 16, nest with 4 eggs, young hatched May 26 and left the nest June 4. On June 7, a nest with 4 eggs was discovered and on July 2 one

*Ottawa Naturalist, Vol. XXX, No. 11, Feb. 1917.

with 2 fresh eggs. On July 14 still another nest was located, this one having 4 eggs. At this last date males were singing everywhere and the time was undoubtedly one of general breeding. From these records it will be seen that there is a nesting period of at least four months, also that the birds rear three and perhaps four broods in a season. It is interesting to relate that while the birds do not, as a general rule, rear two families in the same nest, one pair did so, while another couple built a second nest within a few feet of the first. One nest, under close observation, contained young which left it in nine days after hatching, and though they were still unable to fly at that time they had, nevertheless, acquired considerable feathering. The nest to which I devoted most attention was situated quite close to the house and within easy vision from a window; it was built among chips and sunken, as usual, in the ground, the locality being one frequented by humans as well as by dogs and poultry. When either of the first two drew near, the brooding bird slipped quietly from the nest, apparently trusting to the color similarity of the young and the nest to the surroundings to keep them from harm, but when a hen came within reach the small bird flew at her with such vigor as to cause the hen to become seriously alarmed and make her leave in a hurry.

The young birds were attended by both parents from the time they were hatched until they left the nest and both adults took an equal share in feeding their offspring, as well as cleaning the nest. As it began to grow dark the female fitted herself over the young for the night while the male after singing in the twilight went to rest in the vicinity.

Judging from the observations made in 1918, it would seem that the food of young prairie horned-larks consists very largely of cutworms which the parent birds dig out of the ground by aid of their beaks. The locating of these insects is performed with remarkable accuracy though it is due to a knowledge of the insects' haunts rather than to a perception of the exact situation in which they rest. Thus, parent horned-larks were seen, repeatedly, searching around clumps of weeds which were more or less isolated through being surrounded by bare spots, these being the situations which our observations have shown are most frequented by cutworms. The time occupied in securing one of those insects naturally varied, but on an average required rather less than four minutes. A pair of birds watched on June 4, feeding young a week old, and commencing at sunset, visited the nest with food on an average every two minutes. Judging from these and other observations we can, therefore, estimate the total number of cutworms consumed in a day at fully 400; in other words, nearly 3,000 a week, and

this does not take into consideration the number of insects eaten by the adults which would add considerably to the total.

Cutworm hunting is naturally a daylight occupation and since it continues until dark there is every reason to suspect that it commences soon after dawn, especially as the male birds begin to sing at the first indication of returning day. The birds I had under observation abandoned their work as the day grew dark.

A few mornings after the records mentioned above were taken, I found the young still in position in the nest, but at 8 a.m. the largest and oldest nestling followed its mother away and was soon after lost in the herbage, neither birds being seen again. The male continued to feed the remaining two until five minutes after nine, when the next largest followed him away. The third nestling was smaller than the others and I fully expected that it would be left to perish as often happens when food is scarce. For a time the male continued to devote all his attention to the one that had followed him but eventually he returned to the nest with a cutworm and shortly after with yet another. Feeling sorry for the hard worked little bird I placed five full sized cutworms on the edge of the nest and then awaited developments. The male soon returned with the usual fare, and then spying the insects placed near, he stuffed four of them in succession down the throat of his greedy charge, taking the last grub to the other bird. He continued to labor on behalf of both young until shortly after eleven o'clock when the remaining nestling followed him away.

The habit of the male bird continuing to support both young after the female had evidently deserted them is naturally a very important characteristic providing it is one that is generally followed. The question remains, would he have attempted to do so had food been scarce? The evidence is in the negative. It is common knowledge to those who have studied horned-larks that they seldom rear more than one of the first brood, the reason for this is apparently the scarcity of insect food at that time, especially the scarcity of cutworms. During June cutworms are at the height of their season and, therefore, the birds find little difficulty in rearing the full allotment of young. July is also a favorable month owing to the presence of locusts and caterpillars of various kinds.

The food of adult horned-larks is less insectivorous than is that of the young and is at least in part made up of seeds and sprouted plants of various kinds, but from the fact that enormous flocks of these birds sometimes continue on the grain fields for two or three weeks in spring time without doing

any appreciable harm we must conclude that they are either eating weed seeds or insects. We know that before the spring really opened that horned-larks partook daily of the weed seeds placed for them. This is doubtless why they became tame

and later nested nearby. We have also seen them repeatedly devour cutworms during the nesting season so that the evidence of their usefulness seems to be without question.

BRIEF REPORT OF THE OTTAWA FIELD-NATURALISTS' CLUB FOR THE YEAR ENDING DECEMBER 2, 1919.

At the March, 1919, annual meeting of the Ottawa Field-Naturalists' Club, the constitution was amended to make the club year coincide with the calendar year, and, therefore, each future volume of the club publication will cover one calendar year instead of parts of two as in the past. In spite of the fact that owing to this change in the constitution, the past year—the fortieth of the existence of the Ottawa Field-Naturalists' Club, covering a period of only nine months—was the most successful in the recent history of the society, which now has a membership of 644, or more than double that of 1917.

The club activities are directed toward the popularizing and the diffusing of knowledge of the natural sciences, and are carried on in three chief ways: a course of lectures, two series of field excursions, and the publication of THE CANADIAN FIELD-NATURALIST.

Owing to the short year the lecture programme was not begun prior to the annual meeting. A list of thirty-six lectures to be given by club members has been sent to local societies, clubs, churches and schools from which they may select and request desirable talks.

The eight field excursions were well patronized, the average attendance being 23. Scientific men attended the excursions to direct interest and answer questions.

THE CANADIAN FIELD-NATURALIST, the official organ of the club which has completed its thirty-third volume, is also now being used as a medium of publication by the four affiliated societies listed on the cover.

At a recent meeting the council was informed that Mr. R. B. White had bequeathed the club one hundred dollars per year, which will be allowed to accumulate along with other funds in trust to form the nucleus of a trust fund the interest of which will eventually be used to promote natural history research work in Canada.

The officers and committee for the year 1920 are as follows:

President, M. Y. Williams; Vice-Presidents, L. D. Burling, R. M. Anderson; Secretary, Clyde L. Patch; Treasurer, Miss E. B. Crampe; Editor, Arthur Gibson.

Additional members of Council: Hoyes Lloyd, W. T. Macoun, G. A. Miller, Miss M. E. Cowan, C. B. Hutchings, C. M. Sternberg, H. I. Smith, P. A. Taverner, E. Sapir, F. W. Waugh, E. M. Kindle, W. J. Wintemberg, R. E. DeLury, F. Johansen.

STANDING COMMITTEES OF COUNCIL.

Publications—Clyde L. Patch, A. Gibson, L. D. Burling, H. Lloyd, F. Johansen.

Excursions—F. W. Waugh, C. M. Sternberg, G. A. Miller, Miss M. E. Cowan, C. L. Patch, C. B. Hutchings, W. T. Macoun, H. Lloyd, F. Johansen.

Lectures—R. M. Anderson, P. A. Taverner, L. D. Burling, W. T. Macoun, G. A. Millar.

Trust Funds—W. T. Macoun, C. Gordon Hewitt, H. M. Ami.

Auditors—J. Ballantyne, E. C. Wight.

LEADERS AT EXCURSIONS.

Archaeology—Harlan I. Smith, F. W. Waugh, W. J. Wintemberg, Dr. C. M. Barbeau, Dr. E. Sapir.

Botany—G. A. Millar, W. T. Macoun, Mrs. A. F. Brown, Dr. M. O. Malte, J. R. Dymond, E. C. Wight, Miss M. E. Cowan.

Entomology—C. B. Hutchings, Arthur Gibson, J. M. Swaine, F. W. L. Sladen, Miss Crampe.

Geology—Dr. E. M. Kindle, Dr. M. Y. Williams, H. McGillivray, L. D. Burling, E. Poitevin, Dr. M. E. Wilson.

Ornithology—P. A. Taverner, C. L. Patch, Dr. M. Y. Williams, A. G. Kingston, Hoyes Lloyd.

Zoology—Dr. R. M. Anderson, A. Halkett, C. L. Patch, E. A. LeSueur, C. H. Young, C. E. Johnson.

Photography—W. S. Hutton.

NOTES AND OBSERVATIONS

THE YELLOW-THROATED VIREO NEAR SEELEY'S BAY.—This bird is usually looked on as rather southern in Ontario, and I was a little surprised to hear its well-known and easily distinguished song in the woods near Seeley's Bay while motoring to Ottawa on July 3, 1919. On looking up the records I find that there are many reports of its occurrence in eastern Ontario, but that observed on the above date is the first one that I remember to have seen myself, and perhaps the occurrence is worthy of record.

W. E. SAUNDERS.

A NEW MAMMAL FOR CANADA.—In the summer of 1890 the writer, with Dr. F. A. Saunders, was collecting mammals at Ottawa, and among others we were after bats. On the evening of July 10, we took in "Clarke's woods," immediately northwest of the Observatory gate of the Experimental Farm, a little brown bat, and unfortunately, we managed to lose the skull. Recently, I was sending some specimens for identification to Washington, and decided that the little bat was sufficiently different to be identified without the skull, so I included it.

The answer comes back that it is the *Pipistrelle*, *Pipistrellus subflavus*, and the first to be taken in Canada. It does not differ from the specimens taken in New York state near Lake George, and that general region, the only source of records up to the present.

This bat may now be looked for in all the territory between Ottawa and the St. Lawrence, and ought to be found at Montreal.

The little known bats are near enough alike to be a moderate puzzle to those who do not know them, but most species can be readily picked out by the initiated. We have in Ontario *Eptesicus fuscus*, *Myotis subulatus*, *M. lucifugus*, and probably *Nycticejus humeralis*, besides the additional species noted above.

W. E. SAUNDERS.

PHENACOMYS INTERMEDIUS FROM HIGH RIVER, ALBERTA.—Among a small number of mammals sent to Washington for identification, one is returned with the above label. I have been hunting for specimens of this genus for years, and it is a sad commentary on one's acuteness to find that an example has been taken and remained unrecognized!

It was with a lot of *Microtus* living in a shrubby valley, and is really remarkably like some members

of the other genus taken there and in the nearby regions. When I showed the specimen to a noted mammalogist he said at once that he recognized *Phenacomys* roughly by the long thick fur, but immediately he found that *Microtus drummondi* from the same locality was indistinguishable. The root characters of the teeth turn out to belong to very old individuals only, and this leaves the younger, though fully grown adults, in the class of "very difficult to identify."

The tail is short, but so are tails of *Microtus* found alongside. To illustrate the difficulty the following measurements are of several specimens:

	Length.	Tail.
854 <i>Phenacomys</i>	123	27
882 <i>Microtus minor</i>	118	26
880 " <i>drummondi</i>	126	35
884 " <i>minor</i>	127	29
885 " "	127	29

W. E. SAUNDERS.

BREWER'S SPARROW IN SASKATCHEWAN AND ALBERTA.—In a recent issue of the *Condor*, there is a record of the occurrence of this sparrow in Alberta, and it is given as the first record for the province. When I looked it up in Macoun's *Birds of Canada*, I was surprised to find that the claim is correct. My impression had been that it was fairly well known and widespread near the Alberta-Saskatchewan line, but in this I was mistaken. Moreover, I find that I have failed to find it three times when on what might be considered to be favorable ground in those provinces, namely, at Gull Lake, Sask.; High River, Alta., and Dunmore, Alta. On Sept. 1, 1896, I took a specimen, my first, at Maple Creek, Alta., and my records do not show any others observed on that day. I did not meet with it again until June 9, 1906, when my train was delightfully held up all day at Cummings, in the dry region of Saskatchewan, owing to a "washout." The other passengers fretted, but to me it was a great chance. In my wanderings through the muddy plains that day, I found two nests of Brewer's sparrow and took two male birds, and heard and saw many others. These are now in my collection and measure 138, 64, 56, 18 and 140, 65, 61, 17.

These birds were inhabiting a sage brush country, and the nests were in sage at about a foot from the ground. They resembled those of the field and chipping sparrows, and the eggs are of the same type.

W. E. SAUNDERS.

PUSS IN A SPARROW CHASE.—Our family cat doubtless has figured in other sparrow chases—of her own instituting, but I want here to introduce her as a star actor in a real humanly-conducted chase, such as the boys in some communities at least, are all familiar with.

As everyone knows, the noisy, quarrelsome, hungry, dirty, little English or house sparrow becomes an intolerably numerous and annoying nuisance at times. To keep him within some sort of bounds, shooting, poisoning, and other means must be employed, and as I have intimated, these various measures may be applied in concert by a whole community. A sparrow chase is ordinarily launched by the choosing of sides, usually in the winter season, when other birds are out of harm's way.

On one occasion Puss entertained us to some rather extraordinary behavior, and set us wondering just what goes on in the mind of a mere cat. When our quest of sparrows one night, took us up into the barn, we found Puss there ahead of us on a like errand, experience having taught her that occasional stragglers might be had for the taking. Being an old pet, our proceedings did not disturb her much, and she looked on quietly, until presently escaping sparrows, blundering about the mows, aroused her interest. In the fitful light of our lanterns the birds would sometimes find new roosting places under the roof, but as often as not they would settle where quite accessible to us, or the cat. The latter was quick to see her advantage, and would spring after a passing sparrow, or marking its course, would pick her way along the framework or across mows, to reach its new resting-place. She was soon fairly beside herself over the novelty of the situation; at least that is how we charitably accounted for some of her eccentric doings. Time and again on capturing a bird, she hurried directly to us, and dropping it at our feet, proceeded to divide her attention between jealously guarding her precious booty, and rubbing herself furiously about our legs. Evidently she knew she "hadn't ought to" trust us humans so far, and yet she was consumed with a desire to manifest her delight, and we were the only beings about to show any adequate appreciation of her magnificent prowess. We surely did lionize her, seeking in so doing to hold her attention sufficiently to enable us to appropriate the sparrow's head before she should take the notion to eat it. The head was all we wanted, but when we feared her appetite might begin to fail, we deftly slipped an occasional bird out of sight, and took care to get her in-

terested in the chase again as quickly as possible. For several nights the comedy was repeated, Puss retaining her inordinate vanity, or whatever we call it, to the end of our operations in this barn. Once in a while, through a lurking suspicion of us, or some other whim of her own, she was ready to ignore us, and make a meal of her capture by herself, but usually coaxing was effective, when her own motives would not have brought her.

I have thought it worth while to record this, because, while a cat with a bird or mouse will often show a certain degree of friendliness, I have never seen or heard of anything to compare with this demonstration. On a couple of occasions I have known a cat with young kittens to behave in a somewhat similar manner. After keeping them carefully secreted for a time, she one day displays unusual attachment to a human friend, persisting in her attentions until she succeeds in drawing him, with evident purpose, to their hiding place—another instance, it would seem, of some overwhelming hunger after human sympathy or commendation, which domestication has placed there.

HERBERT GROH.

ALBERTA NATURAL HISTORY SOCIETY.—The 14th annual meeting of the society was held at Red Deer, on Friday, Nov. 28, 1919.

At the afternoon session the usual business was transacted, including the reading and passing upon of the report and financial statement of the secretary-treasurer, and the election of officers for the ensuing year, viz: Hon. President, Hon. D. Marshall; Hon. Vice-President, Mr. J. J. Gaetz, M. P. P.; Second Vice-President Mr. H. A. Craig; President, Mr. F. C. Whitehouse; Vice-President, Mrs. W. A. Cassels; Second Vice-President, Dr. H. George; Directors, Mrs. George, Mrs. Pamley, Mrs. Root, Mr. E. Wilton, Mr. C. H. Snell, Mr. W. F. Harris; Edmonton, Messrs. K. Bowman, F. S. Carr, D. Mackie.

At the evening session the following papers were read: The executive report, Mrs. Cassels; Annual entomological report, dealing with insect pests, Mr. Whitehouse; The crow family, Dr. George, illustrated with specimens and eggs; Birds of Flagstaff, Alberta, Mr. Fleming, of the University staff, Edmonton.

During the year the following papers were given:

Feb. 31—Notes of a survey tour down Peace river and through the Peace Delta, 1916, Mr. C. H. Snell.

March 28—Butterflies of Alberta, demonstrating

the use of a microscope for showing specimens, Mr. F. C. Whitehouse.

Sept. 26—Edible fungi, Mrs. Powell.

In January a meeting was held at Wetaskiwin and special papers were given by members from Red Deer.

The Society's publication of "Dragonflies

(Odonata) of Alberta" by F. C. Whitehouse, 1918, was followed this year with "Annotated Check List of the Macrolepidoptera of Alberta," by Mr. K. Bowman.

The society's report is published annually in the Report of the Provincial Department of Agriculture.

BOOK NOTICES AND REVIEWS.

SIX NEW FISHES FROM NORTHWESTERN CANADA. By Francis Harper and John Treadwell Nichols. Bulletin of the American Museum of Natural History, Vol. XLI, Art. 11, pp. 263-270, plate XV. New York, Sept. 22, 1919.

A collection of fishes made by Francis Harper, while on an expedition of the Geological Survey of Canada to Great Slave lake in 1914, in company with Charles Camsell "An Exploration of the Tazin and Taltson rivers, Northwest Territories," by Charles Camsell, Memoir 84, Geol. Series 69, 1916, pp. 1-124, plates 18, map 1), has been found to comprise fifteen species, represented by approximately 120 individuals. Although previous collections of fishes from the region had been scanty and the material in poor condition, the collection described contained a surprisingly large proportion of previously unknown species. The new species described are as follows:

Catastomus richardsoni Harper and Nichols. Richardson's Gray Sucker; "Gray Sucker." Type locality, Taltson river, at its junction with Tazin river, south of Great Slave lake. Geographic range, Mackenzie and Winnipeg (?) Basins. Although this species was discovered by Dr. Richardson, it has been either disregarded or considered identical with various other species for nearly a century.

Opsopoeodus borealis Harper and Nichols. Athabasca Minnow. Type locality, Lake Athabasca, at Fort Chipewyan, Alberta. Type specimen, No. 1048, Victoria Memorial Museum, Ottawa.

Coregonus preblei Harper and Nichols. Preble's Whitefish. Type locality, Tazin river, about one mile above its confluence with the Taltson river. Type specimen, No. 1038, Victoria Memorial Museum, Ottawa.

Leucichthys entomophagus Harper and Nichols. Tazin River Cisco. Type locality, Tazin river, at the foot of Kolethe rapids. Type specimen, No. 1021, Victoria Memorial Museum, Ottawa.

Leucichthys athabasca Harper and Nichols. Cisco of Lake Athabasca. Type locality, Lake Athabasca, at mouth of Charlot river, northern

Saskatchewan. Type specimen, No. 1020, Victoria Memorial Museum, Ottawa.

Leucichthys macronathus Harper and Nichols. Cisco of Great Slave lake. Type locality, Shore waters of Great Slave lake, near Fort Resolution. Type specimen, No. 1031, Victoria Memorial Museum, Ottawa.

All but one of the above are valuable food fishes. The commercial use of these fishes is becoming more important as settlement advances into this borderland of the north, and the work of Mr. Harper is an indication that much is to be expected when the fish fauna of the region is more thoroughly examined scientifically.

R. M. ANDERSON.

THE BIRDS OF THE RED DEER RIVER, ALBERTA, by P. A. Taverner. Reprinted from the *Auk*, January and April, 1919. A report of work done on and near the Red Deer river in the summer of 1918, by the author, assisted by the keen intelligence of Mr. C. H. Young, both of the Geological Survey staff.

The party floated down the river in a rough but roomy and competent boat made for the purpose, of which the author says that he knows of no important detail where a change would have been advantageous. Camps were made at convenient locations for several days at a time, and each locality was worked as thoroughly as time and circumstances permitted. A map is attached, showing the location of the various camps, and the topography of the country in general.

The present account, including additional information available from local sources, doubtless includes most of the breeding birds of the region. A commendable feature of the report of the expedition is the treatment of the matter of geographical variation, that bugbear of the field naturalist. There are specialists whose energies are (or appear to be) wholly devoted to the discovery of infinitesimal shades of difference between examples of a species from different habitats, and far be it from us to hint that theirs is not a useful niche in the world of ornithology, but the results

of their work are often a thorn in the side, until we become sufficiently calloused to ignore them. Taverner is a radical, and realizes that varietal differences are not always items of the highest importance and goes on his way in blissful carelessness of what some other members of the ornithological world may think or say of his conclusions. It is thus that progress is made, and the present writer finds it difficult, or impossible (?) to criticize such an attitude severely, being too strongly tinctured with that same spirit of radicalism himself.

One evident lack in the preparations for the trip, was the providing of a pair of competent listening ears, for while the sight records of the party are beyond criticism, there are omissions which a pair of good ears might have prevented. Sprague's skylark, for instance, probably delivered its song within hearing, dozens of times, before the bird was added to the list at Camp No. 11, while the Yellow rail lives in most favorable marshes in the district traversed, and needed only to be listened for, to be added.

What the party may have lacked in this regard was fully made up by the keen diligence with which the objects of the expedition were pursued, and the members are to be congratulated on the results obtained.

One must not forget to mention the photographs with which the report is illuminated. To take such views, one needs a keen artistic sense as well as an accurate knowledge of the capabilities of the camera, and both of these the author has with him on the spot, and used them with the very best results. Seldom indeed, is an article read which is illustrated with pictures of such beauty, and which, at the same time, convey to the mind such a clear perception of the country explored.

As a whole, the paper makes a fine starting point for the further study of the birds of that part of Alberta.

W. E. SAUNDERS.

In the *Auk* for July, 1919, are the following titles of Canadian interest:

SOME NOTES ON THE DRUMMING OF THE RUFFED GROUSE, by H. E. T. Trotter, pp. 325-339. This recounts personal experience with, and the study of, the drumming of this species and is an important and interesting contribution to a question that has long been of interest and an object of considerable controversy amongst observers.

THE SINGING TREE, OR HOW NEAR TO THE NEST DO THE MALE BIRDS SING? by H. Mousley, of Hatley, Que., pp. 339-348. This is an account of the methods pursued by this notable warbler nest-finder. The substance of the article is that the

male bird has usually a regular habit of singing from a favorite perch, as a rule within twenty yards of the nest. The discovery of a bird habitually singing through the nesting season from a certain point considerably limits the area to be searched for in finding the nest. By carefully watching this area centered on the "singing tree" Mr. Mousley has probably found more warbler nests in the past few years than any one else in an equal time in Canada. The article is a valuable contribution to field methods and to our knowledge of bird habits and should be read by all interested in the field study of birds.

IN NOTES ON NORTH AMERICAN BIRDS, pp. 406-408, Harry C. Oberholser concludes that our American Pipit should be reduced to a subspecies of the Old World *Anthus spinoletta* and should be called *Anthus spinoletta rubescens*. He also pleads for the recognition, not at present accorded it, of the Kennicott Willow Warbler as a subspecies of *Acanthopneuste borealis*.

IN GENERAL NOTES, under the title of—

THE GENERIC NAME OF THE GANNETS, p. 417, Harry C. Oberholser recommends the adoption of Mathew's proposal to split the genus *Sula* but following the Code of Nomenclature of the A.O.U. decides contrary to him that the name *Moris* is the proper term for the division including our Gannets. *Sula bassana* would thus become *Moris bassana*.

THE STATUS OF THE GENUS ARCHIBUTEO, p. 420, the same author, states that further investigation induces him to agree with Hartert's proposal to unite this genus with *Buteo* as in the feathering of the tarsus, the most important character of *Archibuteo*, it intergrades with it. He, therefore, recommends that *Archibuteo* be reduced to subgeneric rank or dropped altogether in which case our two species would stand as *Buteo lagopus sanctijohannes*, American Rough-legged Hawk, and *Buteo ferrugineus*, Ferrugineus Rough-legged Hawk.

P. A. TAVERNER.

PUBLICATIONS OF THE AMERICAN MUSEUM OF NATURAL HISTORY.—The Ottawa Public Library recently received for the Field-Naturalists' Club, the following three books, from the American Museum of Natural History:

"Illustrations of the North American species of the Genus *Catocala*."

"The Indigenous Land Mammals of Porto Rico, Living and Extinct."

"Equidae of the Oligocene, Miocene, and Pliocene of North America, Iconographic Type Revision."

These memoirs have been placed with the Field-Naturalists' collection and may be examined on application.