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JOINT BULLETIN No. 1

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# Vermont Botanical and Bird Club

Comprising Bulletin No. 10 of the Vermont Botanical  
Club and Bulletin No. 9 of the Vermont  
Bird Club

APRIL, 1915

Published Annually by the Club

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## **OFFICERS AND STANDING COMMITTEES.**

PRESIDENT, Ezra Brainerd, Middlebury.

VICE-PRESIDENT, H. F. Perkins, Burlington.

SECRETARY, George P. Burns, Burlington.

TREASURER, Mrs. Nellie F. Flynn, Burlington.

EDITOR, George L. Kirk, Rutland.

LIBRARIAN, Miss Phoebe M. Towle, Burlington.

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### COMMITTEE ON SUMMER MEETING, 1915.

Miss Alice W. Wilcox, St. Johnsbury

Miss Inez A. Howe, St. Johnsbury.

Miss Mabel A. Shields, St. Johnsbury.

W. E. Balch, Lunenburg.

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### COMMITTEE ON WINTER MEETING, 1916.

Jay G. Underwood, Hartland.

Miss Inez A. Howe, St. Johnsbury.

Dana S. Carpenter, Middletown Springs.

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One copy of the bulletin is sent to each member. Extra copies of bulletins 1 to 9 of the Vermont Bird club and bulletins 1 to 10 of the Vermont Botanical club may be obtained of the librarian at Burlington for 10 cents each to club members and 25 cents to outsiders.

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## EDITORIAL.

With this issue appears the first joint bulletin of the Vermont Botanical club and the Vermont Bird club. It is believed that the consolidation of these two organizations will make a stronger club and, as plant and bird study go hand in hand, the union should bring about a deeper interest in the subject in the state with its consequent good results. This larger bulletin will command more attention outside of the immediate membership of the club than either of the two smaller publications previously issued and it should result in larger enrollment of members among persons who are summer visitors to the Green Mountains.

To get out a better bulletin means greater cooperation of members in providing material, hustling to get more nature lovers interested in the club and more prompt payment of dues. The treasurer's report shows that there is reason for this last suggestion.

The editor is pleased with the many short notes of interest sent in for the 1915 bulletin. This is a feature worth expanding and it is gratifying to see it grow. We welcome, too, the article on fungi. This branch of botany has been neglected of late in the state and the publication of local lists is to be desired. The moss and lichen enthusiasts should be heard from also.

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## MEETINGS OF THE YEAR.

THE WINTER MEETING OF 1915.

*C. D. Howe.*

The 14th annual winter meeting of the Vermont Bird club was held in conjunction with the Vermont Botanical club at Williams Science hall, University of Vermont, Burlington, on Friday and Saturday, January 29 and 30, 1915. The first session began at 10.30 a. m., with Pres. Ezra Brainerd of the Botanical club in the chair. Pres. G. H. Perkins of the Bird club proposed that the two clubs consider the idea of uniting. It was voted that the chair appoint a committee of five members composed of the members of both clubs to consider this matter.

It was voted to accept and endorse the action of President Perkins in making the club a member of the National Association of Audubon societies and to reimburse him for the fee of \$5 which he had paid.



It was voted to pay the expenses of Herbert K. Job as lecturer before the club.

The chair appointed as committee to consider the matter of union, Prof. G. P. Burns, D. S. Carpenter, J. G. Underwood, Miss Annie Lorenz, and Miss Inez A. Howe.

Mr. Underwood, Miss Howe, and G. W. French were appointed as a committee on summer meeting.

The treasurer submitted his report, which showed \$38.01 on hand in the general fund of the club, and \$32.21 on hand in the life membership fund. This report was accepted and adopted by vote of the club.

At the afternoon session the committee on union made a report which was accepted and adopted by the club. By this action the club accepted the principle of union, provided the name to be the Vermont Botanical and Bird club, agreed to the election of joint officers for the two clubs, agreed to the publication of a joint bulletin, and to the election of a permanent committee on union who should consider the matter carefully and make a report in writing at the next winter meeting of the club.

Prof. A. E. Lambert, president of the Audubon society of Vermont, spoke in regard to the work of that society, asking recognition and relationship between the Audubon society and the united clubs. It was voted that the matter of relationship be left to the decision of the permanent committee on union.

The chair appointed as committee on permanent union of the two clubs, Prof. G. H. Perkins, Prof. G. P. Burns, Mrs. A. B. Morgan, and J. G. Underwood. The meeting insisted that President Brainerd should be a member of this committee and he was elected by the club.

The nominating committee consisting of Mr. Underwood, Mr. Carpenter, A. K. Peitersen, Miss Lorenz, and Miss Howe reported the following officers to serve as joint officers of the two clubs for the ensuing year, and they were elected by vote of the clubs: President, Dr. Ezra Brainerd, Middlebury; vice-president, Dr. H. F. Perkins, Burlington; secretary, Prof. G. P. Burns, Burlington; treasurer, Mrs. Nellie F. Flynn, Burlington; editor, George L. Kirk, Rutland; librarian, Miss Phoebe M. Towle, Burlington.

During the meeting the following new members were elected: Mrs. George Wales, Burlington; Richard Gaylord, Waitsfield; A. E. Lambert, Middlebury; Miss Leila E. Honsinger, Swanton Center (P. O. St. Albans, R. F. D.); P. A. Sneider, U. V. M., Burlington; Mrs. John K. Hooper, Burlington; Miss Josephine Tatro, 39 Lafayette Place, Burlington; Miss

Inez Perkins, Dewey Mills; Mrs. Frances Jolly, Berkshire; Mrs. J. D. Jarvis, Waitsfield; Miss Mabel I. Durivage, Concord, N. H.; Mrs. G. A. Robbins, 249 Church St., Burlington; Prof. G. P. Burns, Burlington; Miss Lilla Montgomery, Burlington; Miss Blanche Montgomery, Burlington; C. H. Knowlton, Hingham, Mass.; Prof. H. F. Perkins, Burlington; Mrs. Mary E. French, Middletown Springs; Miss Grace Wheeler, Springfield; Miss Elizabeth McCarthy, Springfield; Mrs. I. R. Doane, Springfield; Mrs. H. H. Blanchard, Springfield; Mrs. Lydia Hall Hardy, Danville; George M. Wright, 280 Broadway, New York; Mrs. E. H. Sargent, East Thetford; Miss Stella Hitchins, Middletown Springs; G. C. Cunningham, Burlington; L. H. Flint, Burlington; Mrs. G. C. Cunningham, Burlington.

The club voted to hold the next summer meeting at St. Johnsbury at the invitation of the St. Johnsbury museum, July 6, 1915. The following were appointed as a committee to have charge of the arrangements: Miss Alice W. Wilcox, Miss Howe, Miss Mabel A. Shields, W. E. Balch.

The annual supper to visiting members and roll call was held at Commons hall at 6. p. m. At 7 p. m. the clubs listened to an extremely interesting illustrated lecture by Herbert K. Job, entitled "Value and Profit from Wild Birds."

During the sessions the following papers were read: "Some Bird and Flower Experiences," by Miss Inez Addie Howe of St. Johnsbury; "Field Notes on Birds," by George H. Ross of Rutland; "The Audubon Society of Vermont," by Prof. A. E. Lambert of Middlebury; "A Study in Bird Ecology," by Mrs. A. B. Morgan of Woodstock; "What Happens in the Bird's Egg" (illustrated by lantern slides), by Dr. H. F. Perkins of Burlington; "Observation of Birds along the Source of the Black River," by Mrs. W. H. Moore of Woodstock; "The Occurrence of the Short-billed Marsh Wren and Henslow's Sparrow at Clarendon," by L. H. Potter, Clarendon.

Twelve botanical papers were read and discussed. Pres. Ezra Brainerd's talk on "New Stations for Rare Forms of *Rubus* in Vermont" was of especial interest and Professor Peitersen's paper entitled "Some Problems in the Study of Vermont Blackberries" was highly instructive.

## THE SUMMER MEETING OF 1914.

Nellie F. Flynn.

The summer meeting of 1914 was held at Fair Haven, Thursday, Friday and Saturday, July 9, 10 and 11. Headquarters were at Hotel Allen, which sets an unexcelled table.

Thursday morning was spent in botanizing on some of the hills of slate rock formation near the village and at a place owned by Zenas H. Ellis, a member of the club, who is carrying on a small experiment farm for his own amusement. He grows a great many plants of economic value—fruits, nuts, berries, etc., in great variety. Among them were the black walnut, fig, olive, cactus, a *Physalis*, which makes a delicious preserve sampled by the club, an *Amelanchier* heavily loaded with especially fine fruit, all sorts of garden herbs, and other plants too numerous to mention.

The afternoon was spent in a cedar swamp where grows the swamp valerian, *Valeriana uliginosa*. Some hybrid ferns were also found, besides the usual plants of such a habitat. *Calypso borealis* was looked for in vain.

Friday, the board of trade of Fair Haven furnished automobiles to carry us to West Haven and return. The day was spent about the ponds and cliffs of that region. The ponds were visited in the morning and among other plants was found the water star-grass, *Heteranthera dubia*. A long log lying beside the Poultney river furnished seats while we lunched, and after the inner man was satisfied, the cliffs furnished some good stiff climbing. We were well rewarded, however, by finding luxuriant specimens of the purple cliff brake, *Pellaea atropurpurea*, the slender cliff brake, *Cryptogramma Stelleri*, the wall-rue spleenwort, *Asplenium Ruta-muraria*, and the maidenhair spleenwort, *Asplenium Trichomanes*. Special attention was paid to the blackberries on all the trips.

Saturday morning was to have been spent at Carver's Falls on the Poultney river, but lack of water owing to drought and a new dam, made the conditions unsatisfactory, and the trip was given up. The members dispersed in their several directions, some of us taking a side trip to Lake Bomoseen on the way back to Rutland.

The weather man smiled on the club as he has a habit of doing, and as the attendance was good—some 30 members being present—the meeting was very satisfactory.

## TREASURER'S REPORT FOR BOTANICAL CLUB.

### RECEIPTS.

Cash on hand Jan. 29, 1914 .....	\$ 81.53
Annual dues from members .....	77.00
Interest on life membership fund .....	5.51
Sale of club pins and buttons .....	3.90
Total .....	\$167.94

### EXPENDITURES.

Printing Bulletin No. 9 .....	\$ 47.60
Club pins and buttons .....	44.20
Postage .....	18.30
Printing 500 constitutions .....	9.00
Printing notices and programs .....	8.07
Two years dues to N. E. F. of N. H. S. ....	6.00
Typewriting for Bulletin No. 9 .....	1.75
One-half hotel bill for forester at Townshend, July, 1913.....	1.32
Stationery .....	1.24
Cash on hand, Jan. 28, 1915 .....	30.46
Total .....	\$167.94
Life membership fund .....	\$140.00
Amount of dues outstanding .....	77.00

NELLIE F. FLYNN, Treasurer.

## TREASURER'S REPORT VERMONT BIRD CLUB.

Jan. 30, 1915.

### RECEIPTS.

Cash on hand Feb. 2, 1914.....	\$ 48.82
Received dues call of Dec., 1913.....	34.50
Life membership .....	10.00
Gifts .....	10.00
Sale of bulletins .....	2.30
Dues from new members .....	6.00
Dues call of Jan., 1915 .....	41.50
Total receipts .....	\$153.12

## EXPENDITURES.

Vermont Botanical club, bal. 1913 exp. of notices, etc.....	\$ 5.00
Printing, 1913 .....	8.00
C. D. Howe, Sec., expenses, 1913.....	5.83
H. F. Perkins, expenses, 1913 .....	1.00
Bulletin for 1914, printing .....	63.62
Bulletin for 1914, express and postage.....	7.14
New Eng. Federation, dues for two years.....	6.00
Life membership deposited in bank .....	10.00
Treasurer's expenses, postage .....	8.52
	<hr/>
Total .....	\$115.11
Balance on hand .....	38.01
	<hr/>
	\$153.12

## LIFE MEMBERSHIP FUND.

Deposited in Chittenden Trust Co. dues from 3 life members....	\$30.00
Interest accrued since first deposit was made.....	2.21
	<hr/>
Total on hand .....	\$32.21

J. G. UNDERWOOD, Treasurer.

## SEVEN-YEAR BIRD CENSUS OF A 92-ACRE FARM KNOWN AS "THE HIGHLANDS," WOODSTOCK, VERMONT.

*Mrs. Evaline Darling Morgan.*

The farm at Woodstock, known as "The Highlands," now under observation for the past six years for birds that breed upon it contains 92 acres, of which 20 acres, approximately, is in woodland. There are five separate lots or fields known respectively as main pasture, main field, back lot, 10-acre lot, and house lot. The town line between Woodstock and Hartland runs through the farm diagonally, the buildings and a little more than half the land being in Woodstock.

The farm is fenced largely by the old-fashioned stone walls which encourage the growth of much shrubbery, including apple, maple, cherry, ash, butternut, and oak trees, as well as berry bushes, wild flowers and ferns. The lane leading from the house to the main road

to the east has purposely had the shrubbery left to form protection for the birds. In front of the house a bank covered with young maples attracts many of the shy species and a big crab-apple tree at the corner of the house is the favorite feeding place for both resident birds and migrants. A very large grape vine completely covering a ledge to the west of the house serves as a splendid cover for many young birds, the old ones taking them there after their first flight and feeding them there for many days after.

Cats have never been kept on the farm and as the nearest neighbor on one side is about one-eighth of a mile away, and one-fourth on the other, with a decided elevation on both sides, there have been practically no depredations from them. Red squirrels were more numerous when we first moved to the farm than now. After having several pairs killed there has been no apparent trouble from them.

The woodlands are in the main pasture and in the "back lot," the former being made up largely of sugar maples, the lower side of it being thick with an underbrush of young maples. The woods in the "back lot" are of beech, birch (yellow and white), maple, hop horn beam, sumach, and a few maples. In one section of this lot, 10,000 white and Scotch pines and Norway spruces have been set out.

The farm is watered by springs, a small brook flowing from the one in the 10-acre lot, and two watering troughs, one by the shady roadside and another in the main pastures serve as bird-baths.

Hay is the only crop raised regularly on the farm. There are two vegetable gardens and a large flower garden. A young orchard, a grafted orchard, several old apple trees and scattering natural fruit trees as well as plenty of bird, black and choke cherry trees, hawthorne, red elder, barberry, mountain ash and shad are on various parts of the farm.

The house stands at an elevation of 1,460 feet. The main hill at the west is 1,700 or more feet. "Pike's Peak" in the main field is 1,600 feet.

The distribution of birds by fields is as follows:

MAIN PASTURE AND WOODLAND.

	'08	'09	'10	'11	'12	'13	'14
Hermit thrush .....	2	2	2	2	2	2	1
Wood thrush .....	0	0	1	1	1	1	2
Veery .....	2	2	2	2	3	3	2
Scarlet tanager .....	1	2	1	1	1	1	1
Solitary vireo .....	1	1	1	1	1	1	1

Crested flycatcher .....	1	1	1	1	1	1	1
Wood pewee .....	1	1	1	1	1	1	1
Yellow-bellied sapsucker .....	0	1	1	2	2	2	2
Downy woodpecker .....	1	1	1	2	2	2	1
Hairy woodpecker .....	2	2	2	1	1	1	1
Flicker .....	1	1	1	1	1	1	1
Oven bird .....	1	1	1	1	1	1	1
Red start .....	1	1	1	1	1	1	1
Nighthawk .....	3*	0	0	0	0	0	0
Vesper sparrow .....	3	3	3	3	3	3	3
Song sparrow .....	2	2	2	2	2	2	2
Savana sparrow .....	1	1	1	1	1	1	1
Red-eyed vireo .....	1	1	0	0	0	1	1
Indigo bird .....	1	1	1	1	1	1	1

\*Or more.

## HOUSE LOT AND ROADSIDE.

	'08	'09	'10	'11	'12	'13	'14
Bluebird .....	1	1	1	1	0	0	1
Robin .....	2	2	2	1	1	1	1
Song sparrow .....	2	2	1	1	1	1	1
Phoebe .....	1	1	1	1	1	1	1
Humming bird .....	1	1	1	1	1	1	1
Catbird .....	1	0	0	0	0	0	0
Chestnut-sided warbler .....	1	1	1	1	1	1	1
Purple finch .....	1	1	0	0	0	0	0
Red-eyed vireo .....	1	1	1	1	1	1	1
Oriole (Baltimore) .....	1	1	0	0	0	0	0
Chipping sparrow .....	1	1	1	1	1	1	1
Barn swallow .....	2	2	3	3	3	4	4
Chimney swift .....	3	3	3	3	3	3	3
Summer warbler .....	1	1	0	0	0	0	0
Rose-br. grosbeak .....	1	1	1	1	1	1	1
Chebec .....	1	1	2	2	1	1	1
Chickadee .....	1	1	1	1	0	0	0
Yellow th. vireo .....	1	1	0	0	0	0	0
Bl.-billed cuckoo .....	1	1	1	1	0	0	0
Md. yellow throat .....	1	0	0	1	0	0	1
Bl. and wh. warbler .....	1	1	1	1	1	1	1
Screech owl .....	1	1	0	0	0	0	0
Wh.-br. nuthatch .....	1	1	0	0	0	0	0

## MAIN FIELD AND ROADSIDE.

	'08	'09	'10	'11	'12	'13	'14
Savana sparrow .....	3	3	2	2	3	2	1
Vesper sparrow .....	3	3	3	3	3	3	3
Field sparrow .....	1	1	0	1	1	1	1
Song sparrow .....	2	2	2	2	2	2	2
Goldfinch .....	1	1	1	1	1	1	1
Kingbird .....	1	1	1	1	1	1	1
Brown thrasher .....	1	1	1	0	0	0	0

## BACK LOT AND WOODLAND.

	'08	'09	'10	'11	'12	'13	'14
Vesper sparrow .....	3	3	3	3	3	3	3
Song sparrow .....	2	2	2	2	2	2	2
Field sparrow .....	1	1	1	1	1	1	1
Upland plover .....	1	1	0	1	1	1	1
Partridge .....	1	1	1	1	1	1	1
Flicker .....	1	1	1	1	1	1	1
Hairy woodpecker .....	1	1	1	2	2	2	2
Downy woodpecker .....	1	1	1	2	2	1	1
Chickadee .....	2	2	2	1	1	2	3
Yellow-bl. sapsucker .....	0	0	1	2	2	2	2
Hermit thrush .....	2	2	2	2	2	2	2
Oven bird .....	1	1	1	1	1	1	1
Bl. th. blue warbler .....	0	0	1	0	0	1	1
Bl. th. green warbler .....	0	0	0	1	1	1	1
Chestnut-sd. warbler .....	1	1	1	1	1	1	1
Solitary vireo .....	1	1	1	1	1	1	1
Wood pewee .....	1	1	1	1	1	1	1

## TEN ACRE LOT AND ROADSIDE.

	'08	'09	'10	'11	'12	'13	'14
Red-eyed vireo .....	1	1	1	1	1	1	1
Field sparrow .....	1	1	0	1	1	1	1
Vesper sparrow .....	1	1	1	1	1	1	1
Song sparrow .....	1	1	1	1	1	1	1
Upland plover .....	0	0	1	0	0	0	0

It will be seen from examining this record that the wood thrush and yellow-bellied sapsucker have increased in numbers—the robin,



Baltimore oriole, catbird, screech owl, nighthawk, and summer warbler have decreased.

From this record it is seen that there are 54 different species and an average of 81 pairs to 92 acres that breed at "The Highlands." The number of species to the acre is greater than the average, the number of breeding pairs, less; the average for the state of Vermont being about 95 pairs on the same area under similar conditions. There is a striking uniformity both in kinds and total number of breeding pairs found year after year.

Many of the variations merely show that the bird has changed its nesting site, as to an adjoining field or woodland. Before we moved to the farm the house was unoccupied and around it the birds lived and flourished without fear of being disturbed, and now have simply moved a-field a bit. Winter birds come and find sustenance in the old apple trees, and though I always have food out for them now, I cannot see that it has greatly increased their number. They have never fed from the boxes after May, and this year (1914) none came to feed until January 1, (1915).

My observation of the birds that breed at "The Highlands" is that they are surprisingly constant to time, place and purpose.

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## WHY DOES THE GILLIFLOWER APPLE FAIL TO PERFECT ITS SEED?

(ABSTRACT)

*Henry M. Seely.*

The flower of the apple tree, after the honey bee has graciously brought the fertilizing pollen from the stamens to the stigma, and has thrown out the unneeded blade of the petal, becomes as all know, the fruit, the Apple, Baldwin, Tinmouth, or Gilliflower.

In this mature fruit may, by care, be traced the organs of the flower, the most notable now the united sepals forming the calyx outside and the inner whorl the inclosed compound pistil, the core. One will find the organs of the flower disposed in this way; the calyx, having coalesced with the receptacle now envelops all, its under leaf parts forming the covering skin, the limbs of the compound calyx showing themselves at the crown or blow end of the apple, while within these limbs are crowded as in a miniature bowl, the dried-up remains

of the persistent stamens; the upper side of the leaves of the calyx combines with the bases of the petals and possibly with the minute bases of the stamens, as well as with the under surfaces of the capillary pistil, while the upper surfaces of the five leaves, each rolled upon itself forms the chitinous-like center star, the heart, the core.

In the peach a single leaf is inrolled and the upper surface grown woody, furnishing the stone with its single seed. The core of the apple, however, represents five inrolled leaves, its five cells containing a varying number of seeds.

A slice across the apple reveals what is not evident from the surface, particularly the modified representative of the midrib of the five sepals and five petals now as fibrous organs subcending from the stem to the apex, especially to be at once recognized the five pointed star, the five carpels of the compound pistil—these carpels so folded over, edge touching edge, that a cell is produced and within are the seeds. The upper surface of the leaf is smooth and shining and here may be discovered, somewhat modified, the veins of the original leaf.

Now coming to the heart of our subject, interest may be centered on a single leaf of the core. The feather-veined apple leaf has its midrib and connecting veins. Each vein at the leaf border contains a possible germ and this theoretical germ may by growth form a seed. The infolded leaf catching its borders together enlarges a little at the line of junction, this enlargement being called a placenta, and here is placed the insertion of the germ. Theoretically there may be as many germs, later seeds, as there are veins in the leaf but this almost never occurs. Within and near the cell cover of an apple then must be currents sweeping through the midvein and veins of the carpel. Elaborative juices must be rushing along the prescribed channels, growth must be going on in every germ. Full their streams of irrigation must be, full the miniature rivers, creeks, and brooks, to carry the invigorating flood to the germs soon to mature as seeds, and these seeds under favoring conditions not long after to come forth as vigorous plants.

But what if at some period of growth, circulation should be interfered with, the veins lose their ability to transfer the stream of elaborated sap to the waiting germ?

Look at the cell core of the apple Tinmouth for example. The original veins of the carpel are plainly seen, the seeds plump, and entirely complete. Now cut the Gilliflower from apex to stem and observe, the veins are broken down. Apparently their contents have overflowed into the containing cell. Nutriment for the growing germ

has been cut off, the starved perishing germ leaves but little beside the outer covering.

Now the question, "Why does the Gilliflower apple fail to mature its seeds?" almost answers itself, and in these words; the veins carrying nourishment to the growing germ break down, the needed supply is cut off, the half grown seed is starved and perishes.

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## WINTER BIRDS SCARCE IN VERMONT.

*George L. Kirk.*

For some reason which the writer has not been able to determine winter birds have been unusually scarce in the vicinity of Rutland during the winter of 1914-15. This is true of both the permanent residents and winter visitants. It is true that there was deep snow only for two short periods and beechnuts, which furnish food for some species, were unusually plentiful in the fall of 1914. This would naturally tend to cause the birds to be well distributed over the country and not restricted to certain feeding areas. Reports from other observers indicate that the scarcity of bird life during January and February was noticed in other parts of the state.

Duane E. Kent of Rutland, whose daily duties take him frequently into Addison county, where there is much flat country in which are abundant crops of *Chenopodium* and other free seeders, which lift their heads well above the snow, did not find that this condition obtained in the district cited. He saw many tree sparrows and snow buntings, particularly in the town of Whiting, having once observed a flock of the latter which he estimated to contain over a thousand birds. In Ripton he observed numerous pine siskins on nearly every trip made.

The writer, to show the relative abundance or scarcity of the various species seen about Rutland in the winter, gives below a list of the number of birds recorded on various trips afield. These walks were taken solely with the purpose of observing bird and mammal life. As the weather was usually cold I was usually moving slowly along, not sitting quietly as one would do to study birdlife in the summer. The total number of birds seen in the 74 hours consumed by the trips was 138, or a few less than two to the hour. The total number of miles covered by the trips was 106 so that the average number of birds per mile was very small. Had it not been for the 25 chickadees found liv-

ing in a cedar swamp even this average would have been greatly reduced.

In every instance the most favorable territory was selected, open hardwoods, evergreen forests, shrubby pastures, ploughed ground and bush bordered watercourses being visited at different times. Only one tree sparrow was seen between November 22 and the date of writing (March 5) and not a single shrike, pine grosbeak, snow bunting nor goshawk was recorded during the entire winter. The notes of flocks of redpolls, flying high in the air, were twice heard but as the birds were not seen they were not taken into consideration.

The dates of trips, number of birds seen, distance covered and time spent afield follow:

December 6: Three miles, out three hours; crows, 2; white-breasted nuthatches, 4; downy woodpeckers, 1; American mergansers, 1.

December 13: Three miles, three hours; crows, 2.

December 20: Six miles, five hours; ruffed grouse, 3.

December 25: Three miles, three hours; crows, 8; chickadees, 2.

January 3: Six miles, eight hours; bluejays, 2; downy woodpeckers, 2; chickadees, 6; red-breasted nuthatches, 2.

January 10: Sixteen miles, ten hours; ruffed grouse, 4; tree sparrows, 1; purple finches, 2; crows, 3; white-breasted nuthatches, 2; downy woodpeckers, 3; chickadees, 7.

January 16: Three miles, two hours; great horned owl, 1.

January 17: Three miles, three hours; no birds.

January 30: Three miles, two hours; no birds.

January 31: Five miles, four hours; \*sparrow hawks, 1; †red-headed woodpeckers, 3.

February 4: Two miles; two hours; no birds.

February 7: Five miles, three hours; chickadees, 7; hairy woodpeckers, 1; crows, 2.

February 8: Four miles, two hours; sawwhet owls, 1; white-breasted nuthatches, 1.

February 14: Five miles, five hours; chickadees, 25; crows, 1; white-breasted nuthatches, 1; ruffed grouse, 3.

February 19: Four miles, two hours; prairie horned larks, 1.

February 20: Three miles, two hours; no birds.

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\*Sparrow hawk remained all winter.

†Three red-headed woodpeckers spent entire winter in beech grove.

February 21: Six miles, four hours; white-breasted nuthatches, 2; red-breasted nuthatches, 1; hairy woodpeckers, 1; chickadees, 1; crows, 2.

February 22: Two miles, one hour; prairie horned larks, 2.

February 23: Three miles, two hours; no birds.

March 1: Five miles, three hours; crows, 1; prairie horned larks, 2.

March 3: Five miles, two hours; prairie horned larks, 7.

March 5: Six miles, three hours; crows, 3; red-breasted nuthatch, 1; chickadees, 5; prairie horned larks, 1.

#### SAME SCARCITY AT WELLS RIVER.

Under date of January 22, 1915, R. G. Brock of Wells River writes: "I would like to know if others have noticed a scarcity of winter birds. We have not had a nuthatch, woodpecker nor tree sparrow at our bird table this winter, and only a very few chickadees have come. What blackcaps did appear were strangers and they did not come until after January 1. Heretofore, we have always had some chickadees that had been here the winter before, as we could tell by their actions. I did not see any of the usual late fall birds during the hunting season."

#### A HARTLAND REPORT.

Mrs. Jay G. Underwood of Hartland states that as a whole the number of winter birds there has been less than usual. She writes as follows: "Most noticeable is the scarcity of chickadees. In January they came but rarely for the suet, nuts and doughnuts which I put out for them and when they did come there would be only one or two at a time. They were shy and easily startled. Now (March 5) they come oftener and act more confiding but I have only three or four at a time where in other seasons I had eight or more. I have a flock of 10 or 15 tree sparrows which I feed canary bird seed and they, too, are fond of suet and doughnuts. We have had downy woodpeckers, a pair of white-breasted nuthatches and a male purple finch but not a single hairy woodpecker. There have been no pine grosbeaks this season. A large flock of crows, literally thousands, spend each night in pine woods back of our house, always splitting into three bands which go their separate ways to feed each morning."

#### CONDITIONS AT BETHEL.

Mrs. G. M. Miller of Bethel writes: "Winter birds are very scarce here. There is a flock of goldfinches that is seen rarely. I saw a

brown creeper a few times in December, a shrike twice in January, and on January 9, I heard an incomplete song of a purple finch. I have seen few chickadees and no nuthatches."

#### A SWANTON CENTER REPORT.

Miss Lelia E. Honsinger of Swanton Center says: "We have blue jays, snow-buntings and chickadees, but have never seen a bird on the suet basket. Food, no doubt, has been abundant, owing to the absence of deep snow. In early winter a hairy woodpecker was a frequent visitor. Have neither seen nor heard a woodpecker this month (January) of any variety."

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## PLANT QUARANTINE LAWS.

(ABSTRACT).

*B. F. Lutman.*

The study of plant diseases and their prevention has passed through the same stages as that of animal diseases. Some years ago we felt that the best we could do for either plant or animal pests was to kill them after we were bothered with them; today, we believe that it is cheaper and better to prevent their spread. In this country we have been slower to take such preventive measures than have the people of Europe. We have finally waked up to the fact, however, that we lose millions of dollars every year from plant diseases whose prevention would have been easy if they had been taken in time. They made their way into the country in some fashion and now we are forever troubled by them.

We carry out our measures for the prevention of the spread of plant diseases through our state and federal quarantine laws. The Vermont state law dates from 1908, amended in 1912. It provides for a state nursery inspector appointed by the state commissioner of agriculture, whose duties are to prevent the introduction into the state of diseases, insect or fungus, on nursery stock from outside the state and to inspect the nurseries inside the state. The nurseries are not very large or numerous in Vermont, so the inspector's duties are chiefly concerned with the trees and plants that come over our borders. He gets control of these shipments through the railroad and express companies.

The law only mentions one disease specifically, San José scale, but he also looks them over for root gall, crown gall, hairy root, blister mite and gypsy moth. This control has undoubtedly been of lasting service to Vermont horticulturalists in keeping these pests from getting a foothold in the state.

The international or federal quarantine derives its authority from the Simmon's bill which became a law August 20, 1912. The federal horticultural board, composed of five members, appointed by the United States department of agriculture aids the responsible agent for the enforcement. The law is directed against new and dangerous pests, particularly on florists' and nurserymen's stock. A public hearing is granted before a plant from another country or from a region of this country is quarantined for a disease. Even if excluded for ordinary purposes, plants may still be obtained for scientific and experimental work but only after they have been duly inspected and certified.

The quarantine notices issued so far have been against the importation of the potato from Canada and Europe on account of the powdery scab prevalent there, and coniferous seedlings from Europe. There have also been prohibitions against the shipping of potatoes from certain regions in Maine and New York unless they had been inspected and certified. The work of this board is comparatively new and there are many difficulties in its way but it is doing the country a service that will be appreciated more in future years than it is now.

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## SHORT-BILLED MARSH WREN AND HENSLOW SPARROW AT CLARENDON.

*L. H. Potter.*

North of our house in Clarendon is a small marsh about 10 rods in length by two rods wide, covered mainly with a thick growth of *calamus* and tall marsh grass.

It was on this marsh during the summer of 1913 that I discovered the nest of one of our rarest birds; the short-billed marsh wren.

The birds first made their appearance on the marsh on June 17, and from that date until about July 10, when they were last seen, the male's song could be heard almost incessantly at any time of day or night, no matter what the weather.

Their close proximity to the house afforded ample opportunity for observing them, but so clever did they conceal their nesting opera-

tions that I was unable to locate their home until the grass was being cut on the marsh on July 8, when the nest was found some distance from the spot where the birds were most frequently seen; containing seven pure white eggs.

The nest was globular in shape with an opening in the side, composed of fine grasses, and lined with plant down, situated about one foot from the ground in a thick patch of sedge grass.

I have observed this wren several times on the great marsh in Tinmouth, where they undoubtedly breed.

Another of our rare birds, though more common here than the marsh wren, is the Henslow sparrow. These little sparrows, although considered rare in New England, may be found quite common in favorable localities in West Clarendon. Their favorite habitat is moist upland meadows not under the plow, grown up to clumps of ferns, tall meadow rue, and scattering shrubbery.

Arriving here the last of April or early in May, their two syllabled song, which sounds like serr-it, serr-it, may be heard until the hay is cut, after which they are seldom seen. Yet, I have noted one as late as the middle of September.

These birds are very difficult to identify owing to their habit of hiding in the grass and not flushing until nearly stepped upon, then flying but a short distance before alighting, rarely giving one a good view through a field glass.

Although I have known from six to eight pairs nesting on or near our place every year, I have been unable to learn but very little about their nesting habits.

I have discovered two nests, one on August 9, 1909, and the other, August 9, 1911; each containing one fresh egg. Both of these nests were mowed out while men were cutting hay on their nesting grounds.

Both nests were abandoned by the birds and are now in the writer's possession. They were situated in a depression in the ground, composed entirely of fine grasses and arched over the top; concealed in a patch of thick grass.

The eggs are pale greenish white, covered with reddish brown blotches, about the size of those of the chipping sparrow, although not as pointed.



**BIRD CALENDAR FROM WAITSFIELD.***Mr. and Mrs. C. M. Richardson.*

## RESIDENTS.

Black-capped chickadee, blue jay, crow, hairy woodpecker, downy woodpecker, white-breasted nuthatch, red-breasted nuthatch.

## MIGRANTS AND SUMMER RESIDENTS.

	1912	1913	1914
Mallard .....	4-26	2-23	2-17
American merganser .....			5- 5
Canada goose .....		5-	10-13
Great blue heron .....		9-	9-
Herring gull .....		9-	4-23
Great northern diver .....	10-15		
Yellow rail .....	10-15		
Red-tailed hawk .....		4-13	
Sparrow hawk .....	4-26	7-24	5- 7
Sharp-shinned hawk .....			9-
Broad-winged hawk .....			5- 6
Pigeon hawk .....			4-27
Red-shouldered hawk .....	5-18		
Osprey .....			9- 5
*Swallow-tailed kite .....		4-26	
Spotted sandpiper .....	5- 3	5- 3	4-30
Semi-palmated sandpiper .....			5-24
Black-billed cuckoo .....	7-		5-10
Belted kingfisher .....	7-	5-14	4-27
Yellow-bellied sapsucker .....	5- 2	5- 7	4-30
Arctic three-toed woodpecker .....			4-30
Flicker .....	4- 2	4-18	4-15
Nighthawk .....	9-	6- 2	7-12
Chimney swift .....	5- 5	5-15	5-10
Barn swallow .....	4-26	4-25	5- 4
Eave swallow .....	5- 3	4-24	5- 9
Tree swallow .....	5-10	5- 6	4-23
Bank swallow .....	6- 9	5-26	5- 8
Swamp sparrow .....	4-17	5-15	
Grasshopper sparrow .....		4-12	4-17

	1912	1913	1914
Tree sparrow .....	4- 8	3-15	4- 1
Fox sparrow .....		4- 4	
Song sparrow .....	4- 2	3-20	3-28
Vesper sparrow .....	4-	4-18	4-15
Chipping sparrow .....	4-17	4-24	5- 4
Field sparrow .....	4-28		5-14
White-crowned sparrow .....	5-21		5-19
White-throated sparrow .....	5- 2	5- 1	4-25
Savanna sparrow .....			4-16
Pine grosbeak .....	3-	2-24	1- 7
Horned lark .....		2-23	3- 1
Redpolls .....	3-		1-25
Lapland long spur .....	2-		
Northern shrike .....	3-		4- 2
Junco .....	3-	2-23	4- 1
Snowflake .....	2-	2-	4- 1
Screech owl .....	2-	2-10	
Partridge .....	3-	3-	5-
Pine siskin .....	4-17		
Brown creeper .....	4-17		
Robin .....	3-	3-10	3-31
Bluebird .....	4- 6	3-16	3-27
Red-winged blackbird .....	4- 2	3-24	4- 4
Meadow lark .....	4- 2	3-20	4- 4
Bronzed grackle .....	4- 3	4-12	4-23
Rusty blackbird .....		4- 6	4-23
Phoebe .....	4- 6	3-31	4-14
Purple finch .....	4-17	4-16	5- 2
Goldfinch .....	5-19	3-20	5-10
Ruby-crowned kinglet .....	5- 2		4-26
Golden-crowned kinglet .....			5- 4
Purple martin .....		7-25	7- 9
Kingbird .....	5- 5	5-14	5- 7
Cowbird .....	5- 8	4-26	5- 2
Bobolink .....	5- 9	5- 6	5- 7
Least flycatcher .....	5- 7	5- 5	5- 5
Olive-sided flycatcher .....			5-24
Great-crested flycatcher .....	6-19	6- 3	
Acadian flycatcher .....	8-	5-11	

	1912	1913	1914
Yellow-bellied flycatcher .....	5-13		
Red-eyed vireo .....	5- 8	4-27	5-26
Warbling vireo .....	5-10	5- 4	5- 8
Yellow-throated vireo .....	5-15		5- 3
Blue-headed vireo .....	5-28		5- 5
Baltimore oriole .....	5-10	5- 5	5-14
Wilson thrush .....	5- 9	5- 1	5-27
Hermit thrush .....	5-19		5- 3
Olive-backed thrush .....	5-27		5-24
Wood thrush .....	5-26	5-21	
Brown thrasher .....	5-26		7- 9
Ruby-throated humming bird .....	5-15	5-23	5-21
Catbird .....	5-18	5-23	5- 8
Scarlet tanager .....	5-19	5-21	6-20
Rose-breasted grosbeak .....	5-19	5-18	5-14
Indigo bunting .....	5-19	6- 3	5-20
Wood pewee .....	5-22	7- 9	5-27
Cedar waxwing .....	5-27	6- 4	5-27
Winter wren .....	8-	5- 8	4-27
House wren .....			5-24
Black and white warbler .....	5-10	5- 1	4-30
Cape May warbler .....			5- 4
Black-throated blue warbler .....	5-26	5- 8	5- 5
Black-throated green warbler .....	5-10	5-11	5- 6
Parula warbler .....			5- 5
Magnolia warbler .....	5-13	5-11	5- 5
Myrtle warbler .....	5- 9	4-25	5- 5
Blackburnian warbler .....	5-24	5- 1	5- 6
Nashville warbler .....	5- 9	5-11	5- 7
Yellow warbler .....	5-12	5- 6	5- 8
Chestnut-sided warbler .....	5-12	5-11	5-14
Wilson's warbler .....			5-19
Redstart .....	5-12	5-18	5-14
Maryland yellow-throat .....	5-15	5-24	5-10
Ovenbird .....	5-12	6- 1	5- 9
Water thrush .....		8-13	5-19
Tennessee warbler .....			5-21
Kentucky warbler .....			5-22
Bay-breasted warbler .....			5-26

	1912	1913	1914
Canada warbler .....	5-21		5-26
Worm-eating warbler .....			6- 9
Pine warbler .....		6- 2	

Mrs. Richardson states that the swallow-tailed kite was seen about Waitsfield for two weeks and that because of its large size, deeply forked tail and strongly contrasted black and white plumage, it was unmistakable.

## FOREST FUNGI OF BETHEL.

*Dr. Perley Spaulding.*

The writer has collected the forest fungi of the township of Bethel, Vt. for a number of years. Very little time can be given to it at any one time and most of the collecting is done incidentally, so progress has been slow. The area to be covered is nearly six miles square or thirty-six square miles. Some of this area has not yet been visited but it is intended to make the search thorough before it is finished. This area has been chosen as being fairly representative of Vermont conditions, since it extends up to the higher Green Mountains on one side while the White River valley is an extension of the Connecticut River valley and has a number of plants of the more southern section.

The typical tree and shrub species are red spruce, yew, hemlock, beech, sugar, red, striped, mountain and silver maple, yellow and paper birch, butternut, aspen, balsam poplar, large toothed poplar, ironwood, hop hornbeam, linden, white elm, black, pin and choke cherry, white ash, shining, pussy and heart-leaved willows, June berry, staghorn sumac, hazelnut, flowering and red raspberries, highbush blackberry, sweetbrier rose, common elder, hobble-bush, maple-leaved viburnum. Rather uncommon species are balsam fir, larch, common juniper, white pine, red cedar (a single cedar swamp known), red pine (a single wild tree known), a hickory (too immature for positive identification), black alder, chestnut (two mature trees known), red oak, slippery elm, mountain ash, black locust, black ash, prickly gooseberry, barberry.

Of the tree fungi mention will be made here only of the most common and largest species. There are *Armillaria mellea*, causing root rot of all kinds of trees but usually noted on stumps and dead roots; *Panus stypticus* on dead wood; *Schizophyllum commune* on dead wood; *Daedalea confragosa*, *D. quercina*, *D. unicolor*, *Lenzites betulina* and *L.*

*vialis* on deciduous wood. *Lenzites sepiaria* and *Trametes pini* on red spruce and hemlock trees. *Fomes applanatus*, *F. fomentarius*, *F. connatus*, *F. fulvus*, *F. igniarius* and *F. obliquus* on deciduous trees and wood; *Fomes carneus* and *F. tsugae* on coniferous wood, *F. pinicola* on both kinds of wood. *Merulius tremellosus* on paper birch wood. *Polyporus adustus*, *P. resinosus*, *P. brumalis*, *P. chioneus*, *P. conchifer*, *P. fissus*, *P. gilvus*, *P. perplexus* and *P. sulphureus* on deciduous wood. *Polystictus abietinus* on coniferous wood. *Polystictus biformis*, *P. cinnabarinus*, *P. hirsutus*, *P. pergamenus* and *P. versicolor* on deciduous woods. *Hydnum caput-ursi*, *H. ochraceum*, *H. erinaceus*, *Irpex lacteus* and *I. sinuosus* on deciduous wood. *Corticium pezizoideum* on poplar twigs. *Hymenochatete tabacinus* and *Stereum purpureum* on deciduous wood.

There are numerous leaf and twig fungi which cannot be mentioned here. What has been done is but a beginning. Collections of the flowering plants are also being made but special emphasis has so far been given to the woody stemmed plants and the larger tree fungi.

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## BIRDS ALONG THE SOURCE OF THE BLACK RIVER.

*Mrs. W. H. Moore.*

For several years past I have spent some days at a time in Plymouth and vicinity near the source of the Black river and along its tributaries. Sometimes in the spring, but more often in the fall, we have taken trips over the hills and mountains and around the lakes near Tyson. The study of bird life in this locality is very interesting.

Some of the representatives which we class as our more northern birds are common residents here, around the lakes and in the higher altitudes: Juncoes, golden-crowned kinglets, red-breasted nuthatches, red crossbills, olive-backed thrushes, olive-sided flycatchers, white-throated and Savannah sparrows, winter wrens, and some of the warblers.

In May of two different seasons I have heard the winter wren in full song, and felt sure that his nest was near by although I have never found it. About midway down the Notch road I saw a wren singing, and it hardly seemed possible that the exquisite music which filled the notch cleft between the hills could come from that mite of a bird perched on a stake by the side of the road! He was very shy on

approach. I heard one singing for several days near the upper lake, and saw one in the fall with flocks of juncos and sparrows in migration.

A pair of pine warblers, with their young just out of the nest, allowed us to observe them at close range near the upper lake while they fed and cared for their tiny, fluffy babies. The olive-backed thrush is heard every season singing during the nesting period near the old notch mountain road, and the Savannah sparrow is common on the hill meadows near the ponds at the Notch. The altitude here is about 1,500 feet. Juncos nest only a little way from the lake on higher land.

We have spent several outings in the fall in this locality, and on two occasions lived in tents on the hill between Plymouth Five Corners and the Black river. The altitude here is 1,800 feet and it is only a few minutes walk to the top or rim at a height of 2,000 feet.

October is a most interesting month in which to observe the late migrants, as well as the winter birds. The robins, bluebirds and juncos left us the last of the month; but the ever-present, happy chickadee, the golden-crowned kinglet, nuthatches, pine grosbeaks, crossbills and siskins, were always with us. Blue jays and partridges were very plenty.

The great horned owls calling and answering through the night (and often in the daytime) and the funny laughing or barking call of the barred owl, together with the sounds of the many little animals, made one almost start when they spoke out *too* near the tent—and then smile and enjoy the strange noises.

The tone of the owls' hooting was at the same pitch as the whistle of the engine on the Central Vermont railway train, which we could hear very plainly. This may have been a co-incident, but it was very noticeable.

One bright, sunny morning, a pine grosbeak perched on the top of a pine tree and gave us a soft rendering of his lovely song; and this was the only time I have ever heard their song.

A flock of wild geese going southward passed over the tents one night, and their honk-honking could be heard along the line of flight, growing fainter with their rapid progress.

Sometimes a partridge would fly onto the tent in the early morning from the pine trees overhead, and the blue jays were most inquisitive neighbors.

One of the most interesting features of these fall observations was the drumming lessons of the partridges. For days the drumming was

kept up almost continuously, first in one locality and then in another. Sometimes if the nights were bright with moonlight they would drum all through the night; and we remarked that the old and experienced drummers were probably in demand as teachers.

Since this experience I have seen an article in one of the outing magazines which described the fall drumming lessons of the young partridges, and the descriptions tally perfectly with our observations.

Large flocks of pine grosbeaks frequently stay around the farm buildings in this locality during extremely cold weather. In the winter of 1912 Mrs. E. E. Earle fed these birds for several weeks and she described a few in the flocks as colored with bright yellow. Her description was very good of the rare evening grosbeak. An item in one of the St. Johnsbury papers that same winter stated that a small flock of the evening grosbeaks had been seen in that vicinity with the pine grosbeaks, that being the third time they had been reported within the state.

One fall, early in November, we took a trip to the top of Saltash mountain from the Plymouth side. The altitude is between 2,200 and 2,500 feet. We were entirely enveloped in clouds a part of the morning, which seemed unfortunate, but these conditions caused a most interesting incident. A flock of robins, evidently bewildered or uncertain in their flight, settled down on the bald top and side of the mountain. There were hundreds of them chirping and singing softly. They had apparently started on their migratory flight.

During that day we saw flocks of American crossbills, pine siskins and numerous red-breasted nuthatches. These little fellows were very sociable and would come down the scrub spruce tree trunks very near us. Their soft chattering and little bugle calls were really quite musical. There were scores of them overhead and in the nearby trees. There is a fascination in watching a flock of pine siskins in their flight, undulating like the goldfinch, though very much more rapid, they will dart out from a tree, cutting wave-like circles, scurry here and there, first high, then low, off to the next hill, and back again. Whether the flock is large or small they always fly as one bird. Their call note, "Swe-e-t," is very like that of the goldfinch.

## CROSSBILLS AT ST. JOHNSBURY.

*Mabel A. Shields.*

As crossbills are rather rare visitors, it may be of interest to the club to know that white-winged crossbills were reported at St. Johnsbury in January, 1915. On January 21, a small flock visited the Sheepcote grounds. Every bird traveler seems to know and go to Sheepcote for the refreshment provided there not only by the evergreens, crab apple trees and barberry bushes, but by the feeding shelves and suet bags kept in readiness by the friends who are always watching to welcome bird guests.

American crossbills visited us in May last year. They were seen at Sheepcote on April 30. They were noted again on May 4. On May 18 and 22 it was my great pleasure to see these birds and introduce two different groups of school children to them. The first morning as we were "bird-walking" between 9 and 10 and approached a small group of evergreens, we were attracted by the unusual coloring of some birds in the road only a few feet in front of us and saw that they were American crossbills eating seeds dropped by others of their flock who were busy at the cones above. We watched them until they flew, noting their twitter as they did so. We did not happen to see them again till the 22nd, when on other grounds not far away we found them enjoying a little change of menu for their morning meal, for this time several were eating the pussy poplar catkins that had grown big and red.

This was my last walk to that locality for some days and I do not know just how long they remained.

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## ADDITIONS TO THE VERMONT HEPATIC LIST FOR 1914.

*Annie Lorenz.*

The additions to the Vermont hepatic list for 1914 are but two in number, both collected by the writer. They are *Chiloscyphus pallescens* (Ehrh.) Dum. and *Diplophyllia apiculata* Evans, making a total to date of 119.

The former was collected at West Haven, during the Vermont Botanical club's summer meeting. It grew upon a rotten log in a



swampy place in the woods below the limestone ledges visited that afternoon by the club.

The little *Diplophylleia* was growing upon a shaded bank along the state road in the town of Guilford, and was collected in August. The writer stopped the car to get it, because this looked like a good place for it. Material of both species has been deposited with Dr. M. A. Howe, at the New York Botanical garden.

There are at least forty species on the New England list which may be confidently expected in Vermont; that is, practically everything except the high alpine species found only upon Mount Washington, and the southern species reaching their northern limit in Connecticut. There are five New England stations at Willoughby alone, one of which is the first North American station.

Of the species quoted in the writer's recent list of species yet to be expected in New England, Vermont is given as the most likely state in which at least a dozen are to be sought, and many more are equally likely to be first detected in Vermont. Mount Mansfield and vicinity have been only superficially examined, and many interesting finds await discovery there.

Any material sent in by collectors will be gladly examined by the writer.

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### \*NEW VERMONT HEPATICAE IN 1913.

*Annie Lorenz.*

The 1913 additions to the Vermont hepatic list were 10 in number and they were all collected in the vicinity of Willoughby Lake during July.

Two species, *Lophozia grandiretis* (Lindb.) Schiffn. and *Diplophylleia gymnostomophila* (Kaal.), a recently-recognized Scandinavian species, are new to North America. Three species, *Clevea hyalina* (Somm.) Lindb., *Neesiella rupestris* (Nees.) Schiffn. and *Lophozia Schultzii* (Nees.) Schiffn., are new to New England.

These five additions are all arctic-limestone species, relics of the glacial period, like the rest of the flora of the Willoughby hills.

The five remaining species are new to Vermont: *Pallavicinia Flotowiana* (Nees.) Lindb., *Nardia Geoscyphus* (De Not.) Lindb.,

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\*Omitted by error from Vermont Botanical Club Bulletin No. 9.

*Cephaloziella Starkei* (Funk.) Schiffn., *Calypogeia suecica* (Arn. & Perss.) C. Müll., *Frullania Selwyniana* Pearson.

The little *Calypogeia* was collected by E. H. Lorenz, the rest by Prof. A. W. Evans and A. Lorenz.

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## NOTES ON TWO VERMONT NATURE CLUBS.

(ABSTRACT).

*J. G. Underwood.*

The Hartland Nature club has had a rather quiet year so far as results go, but the interest is maintained as strong as ever. Excellent meetings have been held and the attendance has been about normal. We face the new year with confidence, anticipating the busiest of our history. The completion of the new town hall now being built will give us better quarters than ever. Provision was made in the plans for the building for a sort of annex which will contain three good sized rooms: one as an historical room for the safe keeping of such relics of the town's history as may be given, one as a permanent home for the village library and the third as a permanent home for the Nature club. This will give us a place to store our collections.

The club has volunteered to assume charge of the grounds around this beautiful building, and plans to use in their development, native trees, shrubs, and flowers as far as possible. Our February meeting will be given up to a study of those Native plants that are available for landscape gardening, different members taking up the sections mentioned.

As the work already accomplished seems to warrant it, the club will continue the study of the song-sparrow this next year, and in the fall will devote one entire meeting to the bird under the leadership of Mrs. Merritt, who is to oversee this study. The topic for this meeting will be the life, habits, and numbers of the song-sparrow in Hartland. Under the leadership of another member the club will as individuals study the life history of wasps; and one meeting will be given up to papers on the observations made. Out door meetings in the summer will continue to be devoted more to exploring and collecting than to formal papers.

I learn that the Nature club at Waitsfield is in flourishing condition. Under the influence of a new building for the library in which a room was given over to the use of this club, a very interesting year

has passed. Meetings were held every two weeks during the summer, and are held every month during the winter. Botanical specimens were brought into the meetings and studied. Some were pressed and mounted so that the club has the beginning of an herbarium. I am informed that from February 21 to September 12, 726 specimens were brought in for study. These included mosses, mushrooms, flowers, and ferns. An excellent study of native trees was conducted and I saw in the spring a very attractive exhibit of the budding twigs, the bark, and the finished wood of the trees.

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## A BIRD CALENDAR.

*Alice W. Wilcox.*

The Fairbanks museum at St. Johnsbury has kept an exact record of the bird-population of the community in 1914, in the form of a bird calendar.

A duplicate set of mounted birds has been used for this purpose. A number of reliable observers have been asked to report the first appearances of the birds in their vicinity with the exact date for each. Our taxidermist, W. E. Balch of Lunenburg, devised a special bracket of wire to fasten to the wall to hold the bird and its label. Each bird on its arrival in the spring was put on its bracket in the order of its appearance; the series bearing the relation of words on the printed page. The labels were typewritten library cards, giving scientific and popular names, size, general description, field marks, main habits, and the date of its first appearance.

As the spring migrants went north to nest, the dates of departure were carefully recorded on the cards below the dates of arrival, and the specimen bird removed from the bracket. At the end of the migration, therefore, only summer residents remained on the calendar.

With the coming of the fall migrants, each one was restored to its place in the calendar and the date of second arrival placed on the card. Upon the departure of each migrant southward, the bird was again removed and the date of last appearance recorded on the card. At the end of the fall migration period, the permanent residents were placed on the calendar. As the winter visitants or irregular visitants arrived, they were added with suitable cards.

The cards assembled at the end of the year give the exact record of the bird life of the community during the year.

The bird calendar, like the flower calendar, affords the easiest method of identifying any specimen observed in the field and learning the main points regarding it. It is of special value to the public schools, and we hope it may be referred to more often by visitors from other parts of the country as its significance comes to be understood.

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## NATURE WORK IN BENNINGTON LIBRARY.

*Miss Josephine M. Keeler.*

In the early spring and summer many small parties met at the Bennington Free library and went bird hunting, Dr. and Mrs. Ross, Mrs. Aiken, Miss Alden and Mrs. Donnelly being, perhaps, the most enthusiastic. All during the spring and summer we had on the bulletin board, in the children's room, pictures of the birds which had come that week and were still with us, the bird case containing all kinds of stuffed birds, being tagged, so that now the children can name them without looking at the typewritten slips. These changes were made with the help of Dr. Ross, one of the library trustees.

In connection with our story-hour, at the library, we have had two Saturdays devoted to our "Winter Birds", and "Our Native Birds". These talks were given and illustrated by Mrs. Aiken.

The exhibition of field and garden flowers was a particularly interesting part of our nature work. It was continued wholly by voluntary contributions, and aroused an unusual amount of interest. The number of specimens brought in reached 149, and they were all named in the library.

This is the first year that any attempt has been made to devote a corner to nature work, but it seems to have established itself permanently, hence, we hope to be able to give a better report next year.

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## A FILIX-MAS HYBRID.

E. J. Winslow of Auburndale, Mass., writes to Mr. Underwood regarding certain ferns from G. L. Kirk's station for Filix-mas near Brandon as follows:—

"I think your 4063 D is *Dryopteris Filix-mas x marginals* though the cutting and form of the pinnules does not indicate that hybrid. The form of the frond and of the pinnæ, position of sori, color and tex-

ture are all right for the hybrid. It has a few normal spores, so few that they may have come from other plants in the wind or from the presspaper. But these ferns are so closely related that the hybrid may prove fertile. In that case this plant may be a third generation Mendelian cross. Your 4063 A is a puzzle. It seems to have no normal spores. The plant is very underdeveloped for July 30. I think it is a hybrid, but if it is related in any way with the *spinulosums*, it is not a very good intermediate. It compares pretty well with a European *Dryopteris remota* in my collection though your fern is much bigger. *Remota* is probably a *D. Filix-mas* x *spinulosa* hybrid, was so regarded by Milde over 50 years ago. I am not sure that your fern is anything more than an extreme form of *Filix-mas*.

"After taking the specimens to Cambridge and comparing them with the herbarium specimens with Dr. Robinson's assistance, he writes in regard to this same plant:—"Your 4063 A is beyond any variation I have found described. I think it is a hybrid but it is not what I should expect as an intermediate with *spinulosa*. I prefer not to make a positive statement until I see the plants in the field."

This station for *Filix-mas* is in a cold ravine, and the plants, about twelve to fourteen in number, are closely associated with a form of *Aspidium spinulosum* var. *dilatatum* forma *anadenium* and with *Aspidium marginale*. Only a few feet away is an abundance of *Aspidium spinulosum* var. *intermedium*.

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## NEW BOTANICAL FINDS FOR ST. JOHNSBURY AND VICINITY.

Inez A. Howe.

During the season of 1914 several additions were made to the local flora of St. Johnsbury and vicinity in connection with the botanical work at the Fairbanks museum.

In St. Johnsbury, *Veronica arvensis* and *Pastinaca sativa* were found in newly seeded fields; *Ribes floridum* along the clayey bank of Moose river; *Anthemis arvensis*, *Geranium molle* and *Convolvulus arvensis* in village lawns. In moist woodland, *Equisetum sylvaticum* was found growing plentifully; *Apocynum medium* by a roadside; *Sparganium eurycarpum* in a marsh and *Cirsium pumilum* in a dry pasture; *Aster novi-belgii* was found growing sparingly on the Passump-

sic river road, and several roadside stations for *Helianthus tuberosus* were located.

*Rhamnus cathartica* was found growing abundantly in a dry pasture in the west part of the town. A new station for *Habenaria hookeri* was located in a bit of woodland near the village, but my best "find" of the season was a single plant of *Habenaria leucophwa* growing in moist pasture land. This last specimen was sent to Dr. Brainerd for verification.

At Stiles' pond in Waterford, about four miles from St. Johnsbury, I found a very large area of *Hypericum virginicum* and also of *Circuta bulbifera*.

In Lyndon, a few miles north of St. Johnsbury, a large patch of *Heliopsis helianthoides* (Dr. Brainerd identified it for me) was found growing on a sandy hillside and a generous quantity of *Potentillo recta* was growing by the roadside a few rods farther north.

A new station for *Solidago cutleri* was discovered by W. E. Balch on Baldwin Hill in Lunenburg, at an altitude of about 2,000 feet. This specimen was sent to Prof. M. L. Fernald for verification.

In my notes published in last year's bulletin, I wish to correct one error. My aster which I identified as *A. sagittifolius*, W. W. Eggleston tells me is *A. cordifolius*.

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## NOTES.

There has been distributed by George L. Kirk several specimens of a peculiar goldenrod from Mount Killington under the name *Solidago calcicola*. This was done on the authority of Dr. Merritt L. Fernald of Cambridge, Mass., who identified the plant from two specimens sent him in 1913. Having since seen a great amount of material of *S. calcicola* from a number of northern stations, Mr. Fernald now considers that the Vermont plant must be excluded from that species, being probably a hybrid between *S. macrophylla* and *S. rugosa*, which was what Harold G. Rugg, D. Lewis Dutton and Mr. Kirk considered it when they first saw it in the field.

Miss Grace I. Ross of Washington, D. C., a member of the Botanical club, and William E. Chamberlin, a chemist in the employ of the United States government, were married at Washington, March 3, 1915.

Mr. Kirk took, at Rutland for the United States biological survey, a bird census similar to that described in this issue by Mrs. Morgan of

Woodstock. He found on 60 acres 68 breeding pairs, including 25 species.

According to Prof. E. S. Shaw, Goldie's fern, *Aspidium Goldianum*, is unusually abundant in the vicinity of Northfield. He knows of one locality in which there are 10,000 plants in an area a person can encircle by walking in five minutes.

Miss Inez A. Howe reports a worm eating warbler at St. Johnsbury on September 25, 1914.

Miss Howe took a bird census on a 40-acre tract at St. Johnsbury in 1914 for the biological survey. She found 24 breeding pairs of birds and, in addition to these, 54 singing males. The most notable nesting record discovered was the grasshopper sparrow.

The European starling has spread as far north as Castleton. A half dozen birds have for some time taken up their abode in a church steeple.

A Bethel bird list sent in by Mrs. G. M. Miller notes 92 species for 1914. She includes Philadelphia vireo, Cape May warbler, Bonaparte gull and goldeneye. A tree sparrow as late as May 7, is an interesting record.

Mary L. Sanford of Stamford, sends in a list of 69 birds observed in Stamford, with many good observations in 1914, about the different species and their nests. A Holboell's grebe was found in the snow in a meadow after the river froze over.

The St. Johnsbury bird list, reported by Miss Inez A. Howe includes 101 species, among which are the Lapland longspur, Canada jay (6), mourning warbler, grasshopper sparrow, goshawk, woodthrush. A late date for Baltimore oriole was October 17.

Miss Inez A. Howe observed an albino bluebird at St. Johnsbury, August 28 to September 30, 1914.

Mrs. J. G. Underwood of Hartland reports that a white-throated sparrow visited her food shelf on Thanksgiving day and remained around her home for three days, leaving on the approach of colder weather.

Mr. and Mrs. Herbert E. Straw of Stowe have found an interesting birch at the foot of Sterling mountain. It is probably a hybrid between the yellow and either the white or gray birches. The clump has been destroyed by brush cutters, but Mr. Straw has transplanted a large root in his yard and will watch it with interest.

A robin spent the winter of 1914-15 at Westminster. J. W. Collins states that he has been unsuccessful in getting it to eat any of various

things offered it, black alder berries, of which there are many in the vicinity, seeming to satisfy its appetite.

William C. Horton of Brattleboro, who has kept a bird record for a number of years, listed 90 species in 1914. Up to January 22 he had had 12 species at his winter feeding table. Notable among these were a song-sparrow and a field sparrow, exceedingly rare even in southern Vermont in winter.

Mr. Horton seconds the expression of A. E. Tuttle of Bellows Falls in Vermont Bird Club, Bulletin No. 8, against the house cat. He writes: "I have observed the work of cats catching young birds. They do their worst work when the fledglings are just off the nest. I hope that in the near future there will be a law, covering Mr. Tuttle's views in regard to cats. The red squirrel and the blue jay are bad enemies to young birds. Since I began shooting these pests on my place I have had double the number of birds formerly found here."

New plants reported for the West River Valley in 1914 by Leston A. Wheeler of Townshend are: *Cerastium nutans*, *Rubus triflorus*, *Viola rostrata*, *Pinus rigida*, *Sorbaria sorbifolia*, *Myosotis arvensis*, *Staphylca trifolia*, *Rubus canadensis*, *R. permixtus*, *Sagina procumbens*, *Lysimachia producta*, *Botrychium ramosum*, *B. lanceolatum* var. *angustisegmentum*, *Taraxicum erythrospermum*, *Desmodium paniculatum*, *Pyrola chlorantha*, *Chrysanthemum parthenium*, *Tanacetum vulgare* var. *crispum*, *Carex formosa* and *Sonchus oleraceus*.



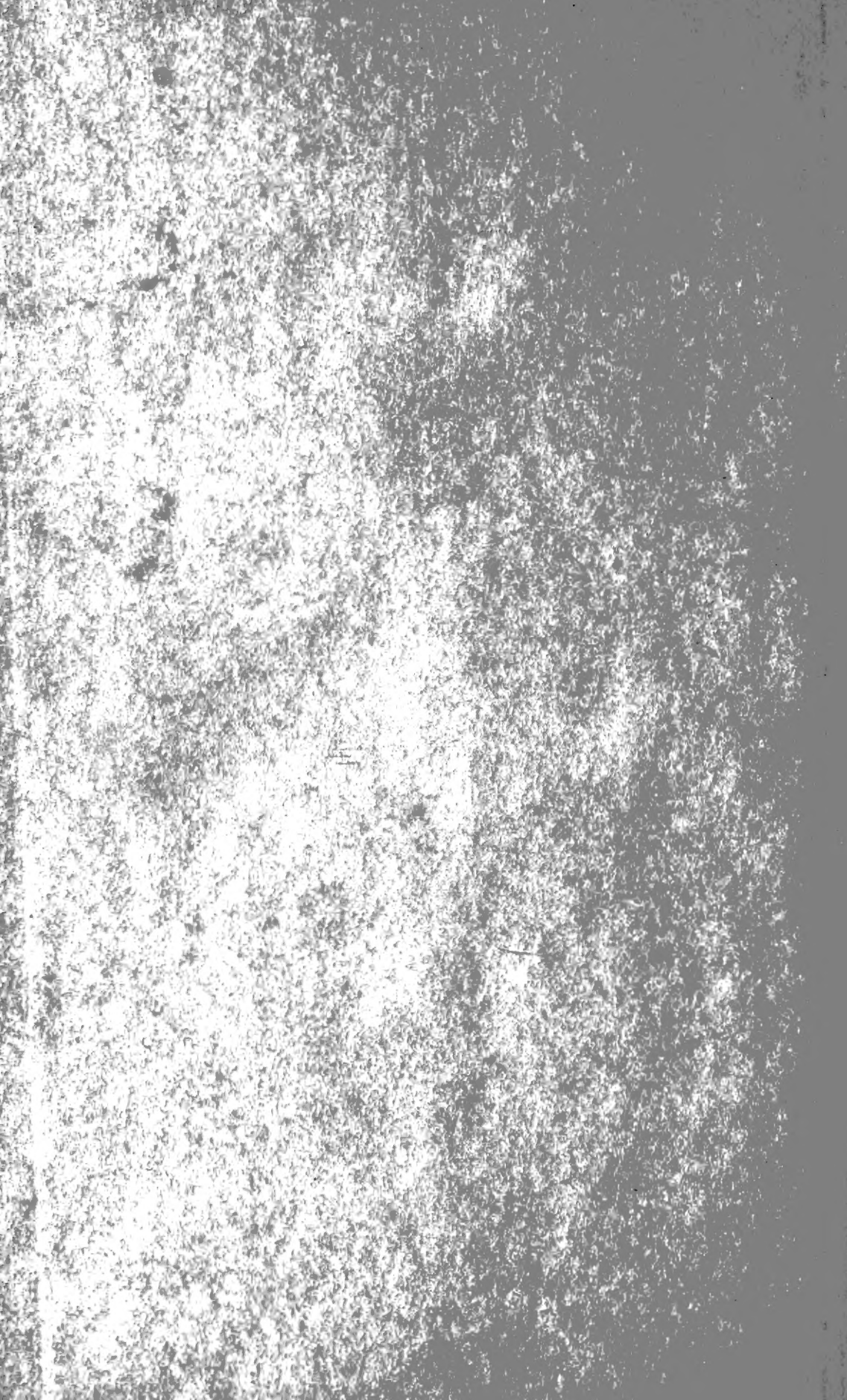














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