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JOINT BULLETIN No. 2

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**Vermont Botanical and  
Bird Clubs**

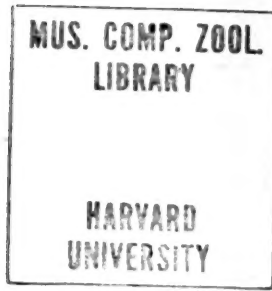
APRIL, 1916

Published Annually by the Clubs

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## OFFICERS AND STANDING COMMITTEES

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PRESIDENT, Ezra Brainerd, Middlebury.  
VICE-PRESIDENT, Harry F. Perkins, Burlington.  
SECRETARY, George P. Burns, Burlington.  
TREASURER, Mrs. Nellie F. Flynn, Burlington.  
EDITORS, George L. Kirk, Rutland, botanical department; A. E. Lambert, Middlebury, bird department.  
LIBRARIAN, Miss Phoebe M. Towle, Burlington.

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### COMMITTEE ON 1916 SUMMER MEETING,

Dana S. Carpenter, Middletown Springs.  
Elroy Kent, East Wallingford.  
Rev. and Mrs. G. W. French, Middletown Springs.

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### COMMITTEE ON 1917 WINTER MEETING.

Harry F. Perkins, chairman.

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EPAE.SBOIRGMLD

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## VERMONT BOTANICAL AND BIRD CLUBS

Joint Bulletin No. 2

April, 1916

Published Annually by the Clubs

One copy of this bulletin is sent to each member. Extra copies of bulletins 1 to 8 of the Vermont Bird Club and 1 to 9 of the Vermont Botanical Club and Joint Bulletin No. 1 may be obtained of the librarian at Burlington at 10 cents each, postpaid, to club members and 25 cents to outsiders.

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## EDITORIAL

The joint bulletin of the Bird and Botanical Clubs appears this year for the first time under the direction of two editors, one representing each department. As two heads are always better than one the new arrangement should result in a larger and more beneficial publication. But the editors must have the cooperation of the members in making this improvement. For some inexplicable reason there has been a dearth of botanical material the last two years. This should not occur again. Every member can at least contribute some short note.

The article on the mammals of Vermont printed elsewhere in this bulletin does not properly belong to a publication on botany and birds. The subject is one which has long been neglected and as the manuscript was ready for the printer and there was no other means of getting it into print the article was included in this bulletin after consultation with the officers of the joint club.

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## REPORT OF SECRETARY

*George P. Burns.*

The 21st annual winter meeting of the Vermont Botanical Club and the 15th annual winter meeting of the Vermont Bird Club were held at the Bardwell hotel, Rutland, January 21 and 22. The meeting was called to order by President Ezra Brainerd with a good number of members present. The chief business of the morning session was the adoption of the report of the committee on amalgamation appointed at the last winter meeting. The committee report was made by the chairman and was as follows:

“Whereas, it is the prevalent opinion of the members of the Vermont Botanical club and of the Vermont Bird club, that their mutual advantage calls for joint action in arranging for the annual meetings and the publication of the bulletin; therefore,

Resolved, (1) That hereafter, until either club orders otherwise, the two clubs in joint session at the winter meeting shall elect a common board of officers, consisting of a president, vice-president, secretary, treasurer, librarian, and two editors for the annual bulletin, one from each club.

(2) That for membership in each or either of the associated clubs the initiation fee shall be 50 cents as heretofore, and the annual dues thereafter 50 cents.

(3) That the ordinary expenses for the two annual meetings and for the publication of the joint annual bulletin shall be paid out of the joint funds collected from the members of the two clubs for initiation fees and annual dues."

The following officers were elected: President, Dr. Ezra Brainerd; vice-president, H. F. Perkins; secretary, George P. Burns; treasurer, Nellie F. Flynn; librarian, Phoebe Towle; editors, George L. Kirk and A. E. Lambert.

The clubs voted to hold the summer meeting at Wallingford and the president appointed Mr. Carpenter, chairman of the committee.

The clubs voted to hold the next winter meeting at Burlington and Prof. H. F. Perkins was made chairman of the committee on winter meeting.

The report of the treasurer was read and adopted.

The clubs passed the following resolution:

"Resolved, That the Vermont Botanical club and the Vermont Bird club hereby express their appreciation of the efforts of the local members of the two clubs for their efforts which made it possible to have a very successful meeting."

The meeting adjourned in time to allow the members to catch the morning trains north and every one left feeling that he had had a most profitable time.

The following new members were admitted:

Botanical section: Mrs. I. R. Doane, Springfield, Vt.; E. F. Gebhardt, 404 College street, Burlington, Vt.; Mr. E. L. Rand, 272 South Winooski avenue, Burlington, Vt.; Mrs. E. L. Rand, 272 South Winooski avenue, Burlington, Vt.; Mr. O. S. Presbrey, 109 Summit street, Burlington, Vt.; Mrs. O. S. Presbrey, 109 Summit street, Burlington, Vt.; Miss Mary E. Coventry, 109 Summit street, Burlington, Vt.; Mrs. Harry L. Winter, South Willard street, Burlington, Vt.; Miss Grace Palmer, South Willard street, Burlington, Vt.; Miss Mabel E. Steele, 36 Portland street, St. Johnsbury, Vt.; J. H. Macomber, 400 South Winooski avenue, Burlington, Vt.; Mrs. J. H. Macomber, 400 South Winooski avenue, Burlington, Vt.; Richard Marble, Woodstock, Vt.; L. H. Flint, University of Vermont, Burlington, Vt.; Miss Margaret H. Ross, 18 South Main street, Rutland, Vt.; Miss Ada Porter Crain, Springfield,

Vt.; Mrs. Fannie W. Raymenton, Cavendish, Vt.; Raymond D. Flanagan, Cuttingsville, Vt.; Miss Belle Robinson, Williamstown, Vt.

Bird section: R. C. Spaulding, 182 South Main street, Rutland, Vt.; Mrs. R. C. Spaulding, 182 South Main street, Rutland, Vt.; Mrs. E. F. Gebhardt, 404 College street, Burlington, Vt.; Miss Ruth Bruce, Williamstown, Vt.; Mrs. Walter B. Simons, Williamstown, Vt.; Richard Marble, Woodstock, Vt.; Mrs. Allen M. Fletcher, Miss Fannie Fletcher, Proctorsville, Vt.; Harry C. Ridlon, Springfield, Vt.; Miss Ada Porter Crain, Springfield, Vt.

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## TREASURER'S REPORT FOR VERMONT BOTANICAL CLUB

*Nellie F. Flynn.*

### RECEIPTS.

Cash on hand, Jan. 28, 1915 .....	\$ 30.46
Annual dues from members .....	93.90
Club pin .....	.65
	\$125.01
Total receipts .....	\$125.01

### EXPENDITURES.

Half bill printing bulletin .....	\$ 32.76
Postage .....	18.06
Printing programs, notices, &c. ....	7.53
Printing receipts and cards .....	3.18
Dues to N. E. F. of N. H. S. ....	3.00
Half stenographer's and typewriting bills .....	1.63
Stationery .....	1.75
Librarian, subscription to <i>Rhodora</i> .....	1.50
Half bill running lantern, winter meeting, 1915 .....	1.00
	\$ 70.41
Total expenditures .....	\$ 70.41
Cash on hand, Jan. 19, 1916 .....	54.60
	\$125.01
Life membership fund in Chittenden Co. Trust Co. ....	\$140.00
Accrued interest on same .....	5.64

**VERMONT BIRD CLUB**

## RECEIPTS.

Cash on hand, Feb. 1, 1915 .....	\$ 50.01
Annual dues for members .....	55.60
	<hr/>
Total receipts .....	\$105.61

## EXPENDITURES.

Half bill printing joint bulletin .....	\$ 32.76
Expense of lecturer, winter meeting, 1915 .....	16.50
Postage .....	15.66
Printing programs, notices, &c. ....	10.94
Dues to Audubon society .....	5.00
Dues to N. E. F. of N. H. S. ....	3.00
Secretary's expenses .....	2.80
Printing dues cards and coin carriers .....	1.82
Stationery .....	1.74
Half stenographer's and typewriting bills .....	1.63
Half bill for running lantern, winter meeting, 1915 .....	1.00
	<hr/>
Total expenditures .....	\$ 92.85
Cash on hand, Jan. 19, 1916 .....	12.76
	<hr/>
	\$105.61
Life membership fund in Chittenden Co. Trust Co. ....	\$ 30.00
Accrued interest same .....	3.49

**THE SUMMER MEETING OF 1915**

*Nellie F. Flynn.*

The annual field meeting of the clubs was held at St. Johnsbury, July 6-10, the Fairbanks museum threw open its doors to us and we met each evening to take care of the day's collecting, to talk over the day's doings and make plans for the next day.

The forenoon of Tuesday, the 6th, was spent in Danville. On the way a fine station for the ragged robin, *Lychnis Flos-cuculi* was seen and some specimens taken. The small toadflax, *Linaria minor*, was growing along the railroad track at Danville station. Two

wooded swamps were visited here. One had nothing of particular interest, but the other had a goodly number of that rare orchid, *Calypso borealis*. It was unfortunately past its blooming period but there were quantities of the twayblade, *Listera convallarioides* and the rein orchis, *Habenaria obtusata* just in their prime. The showy and yellow lady slippers, *Cypripedium hirsutum* and *C. parviflorum* var. *pubescens* grew here, too, as well as other interesting swamp plants.

On the way back to St. Johnsbury two other wooded swamps were visited. There were quantities of *Habenaria obtusata* here also but no *Listera*. The one-flowered pyrola, *Moneses uniflora*, took its place and was abundant in the moss, while the twin-flower, *Linnaea borealis* var. *americana* was rioting over everything on the ground.

In the afternoon some rich woods were explored and among other things Goldie's fern, *Aspidium Goldianum*, the narrow-leaved spleenwort, *Asplenium angustifolium*, and the club moss, *Lycopodium lucidulum* var. *porophilum* were found.

Wednesday was spent at Barton at the junction of the Connecticut and Passumpsic rivers. The false asphodel, *Tofieldia glutinosa*, and the rein orchis, *Habenaria flava*, were growing on the wet banks of the Connecticut, the pearlwort, *Sagina procumbens*, and the blunt-leaved sandwort, *Arenaria lateriflora*, in a ravine leading down to the river, and on the higher ground back of the river was the bearberry, *Arctostaphylos Uva-ursi*, and other interesting plants. In a pool on top of the rocks 10 or 12 feet above the surface of the water, right at the junction of the two rivers, was the horned pondweed, *Zannichellia palustris* var. *pedunculata*.

Thursday was too stormy for any botanizing, but a number braved the elements and tramped to Miss Howe's farm and had a good supper and a jolly time.

After Thursday's storm it was too wet to climb Lunenburg Mountain Friday so we looked over some swampy woods and walked to the village. The adder's mouth, *Microstylis unifolia*, and the adder's tongue fern, *Ophiglossum vulgatum* were collected.

Side trips were made to Lake Willoughby, Lyndonville, etc., by some of the party, and Friday evening Mr. and Mrs. F. H. Brooks entertained us at their beautiful home.



## ADDITIONS AND CORRECTIONS TO THE NEW VERMONT FLORA

W. W. Eggleston.

Because of the great amount of field work which has been done since the manuscript for the new Vermont Flora was prepared, and the changes in nomenclature and errors and omissions which resulted because of the hurried manner in which it was necessary to handle the final copy and the proofs, it is thought advisable to publish a list of additions and corrections to the Flora. The following covers the ground briefly:

- Page 156. *Aspidium cristatum* X *marginale* add, Our most common hybrid fern, (Kirk).
- Page 159. *Botrychium obliquum* var. *oneidense* add, Ira, (Carpenter).  
*Equisetum pratense* add, Brandon, (Winslow); Rochester, (Dutton).
- Page 160. *Lycopodium sabinaefolium* add, Montpelier, (C. H. Knowlton, W. H. Blanchard).
- Page 160. *Lycopodium lucidulum* var. *porophilum* add, St. Johnsbury.
- Page 164. *Potamogeton Vaseyi* add, Cogman Pond, West Haven, (Ross); Rutland, (Kirk). *Sagittaria heterophylla* add, \_\_\_\_\_ of western Vermont.
- Page 165. *Agropyron caninum* change to, Moist ledges, Burlington. (Jones). *Agropyron Novae-Angliae* Scribner in Flora of Vermont 9, 103, 1900. Cliffs of Lake Willoughby and Smugglers' Notch. *A. tenerum* omit, (A. Novae-Angliae) Willoughby Mt., Smugglers' Notch. Add, (A. caninoides Beal). Dry warm rocky wood-lands and ledges.
- Page 166. *Bromus altissimus* add, Otter Creek, Rutland; Poultney River, (Kirk). *Bromus incanus* add, Otter Creek, Rutland; Poultney River; Lake Champlain, Ferrisburg, (Kirk).
- Page 167. *Cinna latifolia* add, of western Vermont.
- Page 168. *Echinochloa muricata*\* (Michx.) Fernald. Manchester, Aug. 22, 1903. (22 W. H. Blanchard). *Festuca rubra* var. *subvillosa* add, \*.
- Page 172. *Puccinellia airoides* (Nutt.) Wats. & Coult. Canadian Pacific Railroad yards, Newport, July 26, 1904. (A. A. Eaton).
- Page 173. *Carex canescens* add, Mt. Mansfield, (Churchill).
- Page 175. *Carex festucacea* var. *brevior* add, South Burlington, (C. H. Knowlton). *Carex laxiculmis* var. *copulata* add, of western Vermont.

- Page 176. *Carex laxiflora* var. *latifolia* add, of western Vermont.
- Page 177. *Carex retrorsa* var. *Robinsonii* Fernald. Brookside, Williamstown Gulf, (C. H. Knowlton). *Carex rosea* var. *minor* add, Burlington, (Knowlton).
- Page 179. *Carex varia* var. *colorata* Bailey. Dry, open woods, Brandon and Burlington, (C. H. Knowlton). Change *Fimbristylis autumnalis* to *F. Frankii* Steud.
- Page 181. *Scirpus atrovirens* add, Swanton, Wells River, very abundant at Alburg, (Knowlton). *Scirpus polyphyllus* Vahl. Pasture bog, Townshend, (Wheeler). *Scirpus sylvaticus* add, Common, West Haven, Fairhaven, (Ross and Kirk). *Scirpus sylvaticus* var. *Bissellii* Fernald. With the species, Townshend, (Wheeler).
- Page 182. *Peltandra virginica* add, Cranberry swamp, Pownal, (Grace G. Niles). *Lemna minor* add, of the lower altitudes. *Spirodela polyrhiza* add, of the lower altitudes.
- Page 183. *Tradescantia virginiana* L. Escape, Townshend, (Wheeler).
- Page 184. *Juncus marginatus* add, Ball Mt., Jamaica, (Dobbin); V. S. Reservation, Townshend, (Wheeler). *Juncus militaris* Bigel. In several feet of water, Sunset Lake, Marlboro, (Wheeler).
- Page 186. *Aplectrum hyemale* change to, Rich woods in low altitudes of western Vermont, local and rare. St. Johnsbury, (Inez A. Howe).
- Page 190. *Salix alba* var. *caerulea*\* change to, Eunice D. Smith. *Salix lucida* var. *angustifolia* add, Swamp, Newport, (Knowlton).
- Page 191. *Alnus crispa* var. *mollis* add, Occasional along West River to Jamaica, (Wheeler).
- Page 192. *Alnus rugosa* add, Rare in lower Connecticut Valley. *Castanea dentata* add, Up West River to Townshend, small grove two miles above village. A couple of trees near West Jamaica, (Wheeler).
- Page 194. *Humulus Lupulus* L. add\*. *Humulus americana* Nuttall Proc. Acad. Sci. Philadelphia 181. (1848). The native plant is known to occur in northern Maine, northern Vermont and across our northern borders into the western mountains. *Parietaria pennsylvanica* change Jamaica to Townshend.
- Page 195. *Polygonum arifolium* add, Townshend, (Wheeler).

- Page 197. *Atriplex patula* L. Alburg, abundant, (C. H. Knowlton).
- Page 198. *Arenaria macrophylla* add Steep wooded slope, East Dover, June, 1905, (Miss S. J. Ballard). West River, (Wheeler). Birdseye Mt., Castleton, (Carpenter).
- Page 199. *Dianthus Armeria* add, Well established in Retreat Park, Brattleboro, (Wheeler). *Dianthus barbatus* add, Middletown Springs, (Carpenter). Roadside escape, Newfane, (Wheeler). *Dianthus plumarius* add, Cemetery escape, Jamaica, (Wheeler).
- Page 200. *Silene Armeria* add, Ira, (Carpenter); Stratton, (Wheeler). *Stellaria borealis* var. *isophylla* Fernald Rhod. 16: 144-151. Barton, Wells River, (Knowlton).
- Page 203. *Ranunculus repens* the double-flowered form add, Jamaica, (Wheeler). *Thalictrum polygamum* var. *hebecarpum* Fernald. Montgomery Notch, (Underwood and Carpenter). *Menispermum canadense*, add W. H. before Blanchard.
- Page 204. *Benzoin aestivale* add, Brattleboro, (Wheeler). *Sassafras variifolium* var. *albidum*. (Nutt.) Fernald. See Rhodora 15:16. For *Sassafras variifolium*.
- Page 205. *B. stricta* Andrz. change to *Barbarea vulgaris* var. *longisiliquosa* Carion.
- Page 206. *Dentaria maxima* add, Montpelier, (C. H. Knowlton). *Draba arabisans* add, Birdseye Mt., Castleton, (Ross).
- Page 207. *Hesperis matronalis* add, Townshend, (Wheeler). *Lepidium campestre* add, Newfane, (Wheeler).
- Page 213. *Fragaria virginiana* var. *terraenovae* (Rydb.) Fernald & Wiegand. Meadow, Middlebury, June 29, 1902, (Brainerd). *Potentilla Anserina* var. *sericea* add, Williamstown Gulf, (C. H. Knowlton).
- Page 214. *Potentilla intermedia* L. Railroad yard, Rutland, (Kirk). *Potentilla pumila* Poir. Putney Mt., Brookline, (Wheeler). *Potentilla recta* add, West Haven, (Underwood & Carpenter).
- Page 217. *Sanguisorba minor* add,\*.
- Page 221. *Polygala verticillata* omit, Townshend, (Wheeler).
- Page 222. *Euphorbia hirsuta* first name change to, *E. glyptosperma* Engelm. (*Chamaesyce glyptosperma* (Engelm.) Small. *Euphorbia Peplus*, change (Blanchard) to (W. H. Blanchard).

- Page 226. *Viola lanceolata* change, Townshend to Jamaica.
- Page 228. *Lythrum Salicaria*, change (Jesup, Sargent) to (Jesup and Sargent). add, Middletown Springs, (Carpenter).
- Page 229. *Myriophyllum spicatum* add, of the Champlain Valley.
- Page 232. *Kalmia latifolia* add, Follows Baker Brook to near Williamsville Village and scattering shrubs have been found on South Hill in Jamaica, (Wheeler).
- Page 234. *Lysimachia producta* add, Townshend, (Wheeler).
- Page 235. *Steironema lanceolatum* add, Ferrisburg, (Kirk).
- Page 236. *Nymphoides lacunosum* add, Lake St. Catherine, (Carpenter). *Apocynum cannabinum* var. *hypercifolium* (Ait.) Gray. Banks of the Connecticut River, East Barnet, (Underwood & Carpenter). Hartland, Underwood.
- Page 237. *Ipomea purpurea*, add,\*. *Phlox subulata*, add, Middletown, (Carpenter).
- Page 238. *Lappula deflexa* (Wahlenb) Garcke. Roadside, Derby, (J. R. Churchill). *Myosotis arvensis* add, Brattleboro, (Wheeler). *Myosotis laxa* add, Fairhaven, (Underwood & Carpenter). *Myosotis scorpioides*, add, \*. *Symphytum asperrimum* add, Townshend, (Wheeler).
- Page 240. *Mentha gentilis* add, Middletown, (Carpenter). *Prunella vulgaris* var. *lanceolata* (Barton) Fernald. Manchester (Mary A. Day). *Prunella vulgaris* var. *lanceolata* forma *iodocalyx* Fernald. Sandy barrens, Westminster, (B. L. Robinson).
- Page 241. *Pycnanthemum muticum* add Clarendon, (Kirk). *Teucrium occidentale* add, Otter Creek and Poultney River, (Kirk). Gardiners Island, (Kirk & Ross).
- Page 243. *Gerardia flava* change, Townshend to Brattleboro. *Ilysanthes dubia* change to, Wet shores and ditches of the lower altitudes. North in the Connecticut Valley to Barnet.
- Page 245. *Utricularia resupinata* change, Townshend to Jamaica.
- Page 246. *Galium lanceolatum*. First name change to. *G. circaezans* Michx. Rich woods of the lower altitudes; common. Norwich, (Eggleston). *Galium Mollugo* add, Newport, (C. H. Knowlton).
- Page 248. *Valeriana officinalis* add, Stratton, (Wheeler).
- Page 249. *Specularia perfoliata* add, Townshend, (Wheeler), *Achillea Ptarmica* add,\*. *Ambrosia trifida* var. *integrifolia* add, Middletown, (Carpenter).

- Page 250. *Artemisia annua* L. Middletown Springs, (Carpenter).
- Page 251. *Aster macrophyllus* var. *ianthinus* (Burgess) Fernald.  
Wells River, (C. H. Knowlton).
- Page 252. *Centaurea consimilis* Bor. Manchester, (Mrs. Emily H. Terry).
- Page 253. *Chrysanthemum Parthenium* (L.) Bernh. Townshend,  
(Wheeler).
- Page 254. *Galinsoga parviflora* Cav. Burlington, (C. H. Knowlton).
- Page 255. *Hieracium floribundum* change, Brattleboro to Townshend.  
*Krigia virginica* add, Tinmouth, (Carpenter).
- Page 256. *Prenanthes alba* change, West River to Brattleboro.  
*Prenanthes altissima* var. *hispidula* add, West Dummerston. (Wheeler).
- Page 257. *Senecio obovatus* add, Ledges in woods, Brandon, (Knowlton). *Solidago canadensis* var. *gilvocanescens* Proctor, (Eggleston), (Gray Herbarium). *Solidago Cutleri*. The specimens from Mt. Horrid, (Dutton) and Lunenburg, (Balch) belong in *S. Randii*.
- Page 258. *Solidago Randii* add, Mt. Horrid, (Dutton); Lunenburg, (W. E. Balch); rocky shore of West River, Jamaica, (Wheeler). *Solidago rugosa* var. *villosa* (Pursh) Fernald. Summit of highway, Arlington to Grout's Mills (2,740 ft.), Stratton, 2043 (Eggleston).
- Page 221. *Geranium molle* L. Persisting in lawn, Rutland, (Kirk).

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## ADDITIONS TO THE VERMONT HEPATIC LIST FOR 1915

*Annie Lorenz.*

There are three additions to the Vermont hepatic list for 1915, bringing the number accredited to the state up to 122. There are also some changes, both nomenclatorial, and in the way of segregations, notably in the genus *Madotheca*. As they do not affect the census, and as Dr. Evans has not yet published his notes on the subject, they will not be discussed here.

The first species, *Scapania paludicola*, Loeske & K. M., has been reported from several stations, the earliest collection in the writer's

herbarium is by Mr. Frank Dobbin, at Jamaica, in 1911. It has been collected also at Franklin, Willoughby and Burke.

The other two, both *Lophoziae*, were collected at Willoughby during the St. Johnsbury meeting. *L. heterocolpa* (Thed.) Howe was abundant in the woods south of the cliffs, on earthy banks among the limestone ledges. This is one of the three members of the limestone group of *Lophozia* at present reported from New England, and Willoughby is the only station where all three are found, the other two, *L. badensis* (Gottsche) Schiffn; and *L. Kanrini* (Limpr.) St., being fairly abundant.

*L. longidens* (Lindb.) Macoun grew on the Mt. Hor side of the lake on a granite boulder in the woods. Both these species appeared at just about the places where the writer expected them. There are now 15 species reported first from Willoughby, and the end is not yet.

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## UNCOMMON BIRDS FOUND IN THE IMMEDIATE VICINITY OF RUTLAND

*Duane E. Kent.*

During the last 12 years I have spent the majority of my leisure time in field work, studying birds and mammals in the immediate vicinity of Rutland. It is very easy to look over a certain territory and locate the more common of our wild friends, but the surprises, and almost unbelievable things happen after we have looked over the territory, as we think, thoroughly, and then find that we have been overlooking certain birds that are summer residents, for the simple reason that we thought they could not be found. This is what I have noticed in my experience.

Owing to the geographical lay of Rutland close to the mountains, we have some bird life that is not usually found in a locality situated in the transition zone, as we are here.

I have some friends interested in bird study, who tell me that they find more varied bird life here than in any other place they have visited in New England. The reason for this is that we are situated at the foot of the Green Mountains, whose altitude rises considerably above the lower levels of the Canadian zone. Also, we have several fine sphagnum swamps, and some of the animal, plant and bird life found

amid such environments is the same as that in a territory strictly in the Canadian zone. As we are situated in the valley of Otter Creek, we have a large list of water birds, both migrants and summer residents.

On April 25, 1915, Mr. G. L. Kirk and I were looking over a patch of woods, for great horned owls, and we noticed that pine-siskins were very plentiful. We commenced looking for the nests, and in a short time we located one in a small hemlock about 15 feet from the ground. This nest contained four birds, but a few days old. This is the only pine-siskin's nest that has ever been reported in this vicinity. The eggs must have been laid as early as April 10. About 20 years ago, when I was at my former home in East Wallingford, about the middle of April, I located a siskin's nest containing four fresh eggs. This was at an altitude of about 1,750 feet.

This last spring (1915), I located three pairs of red-breasted nuthatches, one nesting about one and one-half miles from Rutland city. The nests of the other two I failed to find, but I am positive that one of them bred, as I saw them in the same patch of woods a number of times during the spring and early summer. This was the first time that I had ever seen these birds in the valley near Rutland during the breeding season.

I was also very much surprised to find winter wrens about two miles from Rutland city. Last spring I found four nests, and one showed that it had been used, but probably the year previous. None of the other nests was used, and, as I did not see any of the birds or hear them singing, I thought that they were not nesting there the past season. But finding one nest which showed that it had contained young birds, was conclusive evidence that the winter wren is one of our summer residents here in the valley.

Black-throated blue and Canadian warblers, hermit thrushes, and white-throated sparrows breed each year only a short distance from Rutland. Great-horned and long-eared owls nest each year in swampy woods near; and we have to go back only a few miles to find red-tailed and goshawks and Bicknell's and olive-backed thrushes raising young. The Bicknell probably breeds down to an elevation of 3,000 feet.

Most of the foregoing species are usually found in locations situated in a higher elevation and amid considerably different surroundings than we have in the Otter creek valley. When I visit some of my favorite sphagnum bogs and densely wooded hill-sides, located high up in the Canadian zone, it seems strange that some of the interesting birds seen there are breeding in small patches of woods near my home.

Several pairs of mourning warblers nest on Pine hill, about two miles from Rutland. I have spent considerable time trying to locate their nests, but did not succeed. This is in the locality where I saw a golden-winged warbler last season. (See notes on golden-winged warbler in this issue of the bulletin).

Of the rarer water birds, we have kildeer plover, Bartramian sandpiper, and Virginia rails as breeders. Green herons and American bitterns are common along Otter creek.

In the spring of 1914, Mr. G. L. Kirk and I were passing by a pasture bordering on a swamp, just about dusk, and we were very much surprised to hear kildeer plovers' notes. The next day (May 24) we again visited this place and found the birds with four young. This year there were two pairs in this same place, and on May 8, I found one nest with four eggs two-thirds incubated. This is the only time that I have ever found kildeer nesting in Vermont.

On May 20, 1915, I was looking for red-winged blackbirds' nests in a swamp in a pasture. Small hillocks were formed in this swamp by cattle walking through the mud, and the blackbirds were nesting in the tall water grass and flags that grew on them. As the cattle paths were filled with water, only the tops of the hillocks were dry, and on one of these I found a Virginia rail's nest containing six fresh eggs. Later, (May 22) I again visited it, and it contained eight eggs. Each time that I was at the swamp I tried to flush the bird, but failed, so well do they hide in the grass. I heard no call note or note of alarm. I mention this to show how easy it is to overlook this bird, for, if I had not found the nest by accident, I never would have known that the rails were nesting in this swamp.

About a week later Mr. Kirk and Mr. L. F. Brehmer went to the swamp for the purpose of photographing the nest, and they found it had been destroyed. After going through the swamp several times, they at last succeeded in flushing one of the rails, but could not start it again. Several years ago there was a pair of these shy birds located in the tall grass surrounding a big water hole in the meadow. There are probably several pairs nesting near here each season.

We have three to five pairs of Bartramian sandpipers that nest each season near the city.

If any of the club members have ever found golden-winged warblers or siskins nesting in Vermont, I would appreciate it if they would advise me.



## NOTES ON THE PLANTS OF THE WEST RIVER VALLEY

Leston A. Wheeler.

Additional collections for 1914 are: *Lycopodium clavatum* var. *megastachyum*, *Calix humilis*, *Carex lurida* var. *gracilis*, *Sagittaria latifolia* forma *hastata*.

The following, new to the writer, were collected in 1915: *Aster macrophyllus*, *Impatiens pallida*, *Chenopodium album* var. *viride*, *Ane-mone cylindrica*, *Scirpus sylvaticus* var. *Bissellii*, *S. polyphyllus*, *Ame-lanchier sanguinea*, *Ambrosia trifida*, *Delphinium Ajacis*, *Sedum ternatum*, *Polygonum Carey*, *Datura stramonium*, *Pycnanthemum incanum*, *Desmodium Dillenii*, *D. rotundifolium*, *Polygala verticillata* var. *ambigua*. *P. Sanguinea*, *Lechea villosa*, *Cyperus esculentus*, *Phlox maculata*, *Potentilla pumila*, *Juncus militaris*.

New stations for *Viola lanceolata* and *V. cucullata* x. *ambriatula* were discovered.

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## LIFE HISTORY OF A YOUNG CHIPPING SPARROW

Mrs. A. B. Morgan.

June 21, 1915, a young chipping sparrow brought to me at 2 p. m. From that time till dusk fed it six times with cracker and milk, 10 small grasshoppers, two flies, three millers. It weighed one-half ounce, tail is just starting. Cheeps very constantly, if hungry. Can fly blindly from the top of box to the floor. Seeks to get out of the box and evidently wants to perch on something, will sit contentedly on my finger.

June 22.—Wakes up the household at 4.30 by its insistent cries for food. I give it a generous feed of cracker and milk which silences it for an hour when the cries begin again. All through that day I feed it at intervals of half an hour with cracker and milk and small grasshoppers. Unless the food is thrust well into its throat it cannot swallow.

June 23.—Woke us even earlier, piping incessantly. Will take food oftener, and power of flight increases so that it is able to fly out of a box 10 inches high. Responds to my voice and footsteps, climbs on my red sweater and sits contentedly on my shoulder. I feed him a big grasshopper which distresses him and for the rest of that day refuses to eat any more grasshoppers, but relishes his bread and milk. Towards night stretches, preens his feathers, and looks around to see

where he is. Shakes his cunning little tail which is growing fast. I find him asleep with his head under his wing, and as I put a light near, he wakes up and opens his mouth very wide, taking the food offered him.

June 24.—Power of flight much stronger, feathers growing rapidly. Taken out into the garden, bird shows no recognition of objects or desire to get away. Cheeps gladly when I take it in my hand and carry it back to the house.

June 25.—I notice that the hour of rising is now an hour later and that it calls for food less often.

June 26.—Shows a growing fondness for attention, fluttering and squeaking playfully when I ruffle its feathers and talk to it.

June 27.—Two small children come to call and are greatly entertained by carrying the bird about in their hands, he evidently enjoying it.

June 28.—Flies about at night peering and seeking a higher perch. Is now almost fully feathered and very fluffy and fat. I am continuing the same diet of cracker and milk and grasshoppers.

June 29.—I put him in the wash dish with water, and upon discovering what there is to it bird flutters and bathes, until entirely soaked, looks as if he were drowned, but hops to the edge of the dish and by preening and fluttering is soon restored to a fluffy state.

June 30.—Try letting him fly out of doors, which dazes him and makes him hide in the bushes. My voice reassures him so that he comes to my hand. Always flutters one wing and opens mouth when hungry. Will keep up an incessant cry when so.

July 1.—Picks up food from the floor for the first time.

July 2.—After a day of absence when he is cared for by someone else, he shows extravagant delight upon my giving him his usual petting.

July 3, 4, 5, 6 and 7.—Is taken out each day to the garden where he learns to get food from the ground, seems fond of ants, also picks up gravel. Will follow me about cheeping loudly and climb up on my skirt. When taken in my warm hand and talked to will twitter softly.

July 8.—Flies as far as the grape vine with seeming confidence. Remains there during the forenoon but calls each time he hears the door open. Still prefers to have me feed him rather than to pick up food.

July 9 to 11.—Spends part of the time outside but comes readily to my call. Is brought in each night.

July 12.—I feed him and put him out and of a sudden I see him mount far up in the crabapple tree. I call and he responds, but has no intention, evidently, of coming to me. I see him several times that day, but on the next he has joined several others of his kind about the place, and never more answers my language. I fancy that one bolder and tamer than the rest may be my pet, but have no way to identify him from this time.

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## ONE AFTERNOON'S BOTANIZING

*Nellie F. Flynn.*

A hill in Colchester where there is an abandoned quarry once worked by the Mallett's Bay Marble Company has for a long time attracted me and I had the feeling that there was something new for me there.

At last one afternoon last summer my chance came to explore it. It is a rocky hill composed, I think, of limestone wholly or in part; just such a place as the lime loving ferns prefer. There were *Polypodiums* of course, as there always is in rocky woods in this section, but I was greatly surprised at the quantities of the maidenhair spleenwort, *Asplenium Trichomanes*, and the rue spleenwort, *Asplenium Ruta-muraria*. I have seen them growing in favored locations before in what I thought abundance, but nothing like this.

Not so abundant was the purple cliff brake, *Pellaea atropurpurea*, but it was very luxuriant, some fronds measuring 15 inches in length. Only two or three plants of the ebony spleenwort, *Asplenium ebeneum*, were seen.

The crowning pleasure of the afternoon was reserved for the last and that was the finding of 13 plants of pine drops, *Pterospora andromedea*. I had never seen it growing before and was therefore the more delighted to find so many plants of it. Found three in one place and a little later, just as we were leaving the woods, I found the other 10. Think I should have found more if I had had more time.

## REPORT ON A COURSE IN BIRD STUDY, UNIVERSITY OF VERMONT SUMMER SCHOOL, IN 1915

*H. F. Perkins.*

The course was offered under the joint auspices of the university and the National Association of Audubon societies. Among the students were high school teachers, including two principals. All had some previous knowledge of birds and were able to identify many of the more common species. The work was as largely field observation as possible. A careful record of species positively identified by two or more members of the class in the field shows 68 names. The identification of a large number of species was merely preliminary, the general work of the class being the study of conditions, habits, distribution and nesting. Each member of the class selected a principal genus upon which most of the work was done.

Excursions were made to a number of points at a distance from Burlington, including Fort Frederick, Ausable Chasm and Mount Mansfield.

One species which was unusually abundant during the season of 1915 was the myrtle warbler. This was found in considerable numbers at most of the localities visited and was especially noted on the summit of Mount Mansfield. Among the somewhat unusual opportunities for study of particular species may be mentioned that of making repeated observations upon the Maryland yellow throat, cedar waxwing, scarlet tanager and pine siskin.

A large number of vesper sparrows and of meadow larks, especially their young just out of the nest, offered an excellent chance for careful observations upon these two interesting forms.

The nests and eggs of nearly a dozen species were observed at various times by the class.

In addition to the class work the individual students kept records of their own findings and reported as many as 85 species of birds observed during the six weeks of the course.

Museum specimens of sparrows and warblers to the number of 52 were studied without any labels being present to aid in identifying. The class became proficient in this work to such an extent that they were able to identify any one of the 52 at sight.

One of the interesting experiences of the class was a visit to the Four Brothers Islands where the herring gull nests in the spring in large numbers. Although the nesting season was over, the empty

nests and the remains of food and eggs were examined carefully and many birds, including various sizes of young, were close enough to be studied.

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## BOTANIZING IN ST. JOHNSBURY IN 1915

*Inez Addie Howe.*

During the past season 574 species of flowering plants, 46 of ferns and fern allies and 22 of mosses and lichens were shown on the flower tables at the Fairbanks museum. Only 48 of these were collected beyond our five-mile radius and many interesting additions were made to the local flora of St. Johnsbury.

Most notable among the additions are the following species: *Ribes trieste* var. *albinervium*, on clayey banks; *Hierochloe odorata*, growing plentifully by roadside; *Veronica scutellata*, grows abundantly in a swamp at St. Johnsbury Center and on the shores of Stile's Pond; *Sanicula trifoliata* and *Circaea intermedia* were found in moist, cool woods; *Lappula echinata* sprang up in a newly seeded field.

During the summer meetings of the clubs we found *Linaria minor* at Danville and in October I found another station along the railway at St. Johnsbury. I have a second station for the state for *Hieracium pratense* on the golf links above our village. *Campanula aparinoides* was found in a swamp near the village, and *Euphorbia maculata* I found in several waste places.

Along one of our country roads I found a large area of *Aster ericoides* growing. This species is so unusual in this vicinity that I sent specimens to Dr. Brainerd for verification. I shall be glad to furnish exchange specimens of this species to club members desiring them.

*Desmodium nudiflorum* was found growing plentifully on the Passumpsic road two or three miles south of St. Johnsbury. A new station for *Epilobium densum* was found, and *Pycnanthemum flexuosum* was sent to me from St. Johnsbury Center for identification.

My co-worker at the museum and fellow member of the clubs, Miss Mabel Shields, has also made valuable additions to our town flora during the past season. Her finds are as follows: *Artemisia vulgaris*, on a waste pile; *Verbascum blatteria* var. *albiflorum*, in a hill pasture a little north of town; *Juniperus communis* var. *depressa*, in nearly the same locality; *Pycnanthemum virginianum*, in sandy soil and *Alisma plantago-aquatica*, in wet soil where there was formerly a pond.

Notwithstanding the fact that it is not listed in the new Flora of Vermont, we feel very sure that we have several stations for *Monarda fistulosa*. During August some fine specimens of *Monarda didyma* were brought to us from Danville.

Anything like a complete list of the sedges and grasses of St. Johnsbury has never been made, but we are doing a little more with them each year. However, our finds along these lines are not yet rare enough to be of more than local interest.

Among the plants listed as "rare" or "occasional" in the new Flora, wild thyme has become widely established on a hillside near town and grass-of-Parnassus is as common as white daisies in wet grass lands.

*Ambrosia trifida* is reported from Danville by Mrs. Marion Fairbanks Adams and *Potentilla fruticosa* from Sutton by A. R. Curtis.

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## NOTES ON THE SONG SPARROW

*Mrs. A. B. Morgan.*

Some of the members of the Hartland Nature Club took up the study of the song sparrow in 1915, following the outline suggested by Prof. H. F. Perkins of Burlington. Definite work was assigned to a few members and a general lookout maintained by all. Data were gleaned from various standard works on birds and careful observations were made as to dates of arrival, time when singing was at its height, time and manner of nest building, length of time young are in nest, treatment of young by parents and time when birds depart in the fall. The results are here given:

March 28, 1915, first song sparrow of the year, one individual.

March 31, one individual.

April 1, one individual at "The Highlands."

April 5, song sparrows singing, several individuals.

April 7, song sparrows singing beautifully in the garden at "Sky Farm."

From April 7, song sparrows are common. I find them in their usual haunts at "The Highlands" and recognize them by their individual songs. The male comes out to sing on the grape vine often, the female seems much shyer and is seldom seen.

May 24, the male stops singing, a sure indication that the young birds are hatched and he is busy in supplying food for them.

June 7, discover song sparrow, evidently female, bathing near spring. After this date frequently see her taking her bath about noon. The male is still silent (discover nest in hedge with five eggs).

June 10, the male returns to perch in grape arbor and sings triumphantly. The young are evidently past the most voracious period and his cares are lessening.

June 11, am awakened by song of the male at 4 a. m., very beautiful and happy.

June 13, discover young sparrows in grape vine, where I had suspected the nest was.

June 16, see four young sparrows with parent birds who were feeding them at intervals of from three to five minutes. Young birds utter peculiar "cheep, cheep," asking continually for something to eat.

June 17, parent song sparrows (each) take two little ones about garden to teach them how to get food. Implicit trust on the part of little birds, as they follow old birds and do as old ones do. Occasionally the old birds flew away bringing small moths and other insects which caused great twitterings and talking. The male, overcome with joy, would sometimes fly to his perch and burst forth in ecstatic song. The young birds were very chubby and with shorter tails than those of the parent birds.

June 18 (and for nearly a week), the lessons or meetings went on, and during that time the young birds were taken to the pool by the spring for bathing lessons, or, at least, I find them bathing there with their parents. Shortly after this I discover the old birds are carrying building material into grape vine, but on account of its density and the inaccessible cliff that it covers, I refrain from finding the exact spot of the nest.

The same process as above described is repeated, male sings incessantly for a short time and then the period of silence.

June 29, I again see them rustling about for food and hear the "chink, chinking" when I go near the grape vine.

July 11, take specimen that is full grown. (Second brood).

Aug. 10, many birds found flocking together near "The Highlands," among them many song sparrows.

August 19, get specimen of young song sparrow—length  $3\frac{1}{4}$  inches, wing  $2\frac{1}{4}$  inches, tail 1 inch. Second brood of young song sparrows feeding in my garden.

September 12, young sparrows learning to sing, very retiring, keep to the shrubbery, and strange little squeaky notes arise, which I find positively are the young birds.

October 1, my pet sparrow mounts to his perch and bursts into song, the last time I hear him this season.

October 21, song sparrow in lane—latest date.

#### FALL RECORDS FOR 1914.

September 15, young song sparrows in "The Bottomless Basin" just able to fly. This is the latest record for young birds that I have. (Probably third brood).

September 16, song sparrows about the premises become shy, hiding in the stone and wood piles. Are quiet and attract almost no attention.

September 22, song sparrow running in the garden paths and eating allysum and mignonette seeds.

September 23 to 26, saw from 4 to 10 sparrows daily about the premises and in the lane.

October 10, beautiful, warm day, song sparrow in full song, surpassingly sweet.

October 20, my pet sparrow still living in woodpile.

October 24, latest date for the sparrow this year. Often it is seen late in November.

#### NESTS.

Description of nest found June 7, 1915: In bush one foot from ground, made of grass stems, dry leaves, lined with fine grass and a few fine roots. Depth of nest about 4 inches on outside,  $2\frac{1}{4}$  inches on inside. Five eggs, light bluish green, wreathed with rufous brown, pretty well spotted all over.

#### TIME OF NEST BUILDING.

From observations on my garden birds I draw the following general conclusions: Nest building about one week, probably varies a day or two from that. I think the female does the greater share of the work, as surely the male spends much time singing.

Incubation about two weeks.

Young birds in nest about two weeks, also.

Parents accompanying young about one week.



## THE PRAIRIE HORNED LARK

*George L. Kirk.*

Comparison of notes during the winter meeting of the clubs at Rutland developed the fact that the prairie horned lark (*Otocoris alpestris praticola*) probably does not breed about Burlington, and is irregular as a summer resident in other parts of the state where the country is flat. This was a great surprise to the writer as this lark nests sparingly, but regularly, in the vicinity of Rutland, and there are records for the eastern and southern parts of the state. Positive records of the breeding of this bird in Vermont should be sent to the editor of the bird department of the bulletin, and it will be interesting at some future time to publish a paper on its distribution in the state.

The bird normally reaches Rutland about February 25, always being the first migrant to return. It may, occasionally, remain all winter when there is little snow. Two secured on February 6, 1916 from a flock which were supposed to be the horned lark (*O. alpestris*) turned out to be the sub-species. Certainly the horned lark is not affected by the cold, as the writer has frequently heard its weak, but interesting song coming from a clot of frozen earth, or fence-post, at the close of a late February, or early March day, when the thermometer registered zero.

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## THE BIRDS' CHRISTMAS TREE

*Adelaide B. Denton.*

That our feathered friends might be especially remembered at Christmas time, when all the city was celebrating with gaily decorated trees, we fashioned a Christmas tree for them out of a bare hydrangea bush which grew beside the front window. We tied on bits of suet, cranberries in rosy strings, chains of sunflower seeds and Brazil nuts. The nuts seemed to be the favorite, the greatest delicacy of all. Later we fastened to the tree a wire basket filled with cracked acorns, hickory nuts, bread crumbs and suet.

How quickly the birds found it! The chickadee came first; then the nuthatch and two downy woodpeckers. The three species are often seen feeding at the same time.

We have been much interested, too, in watching the nuthatches. After their appetites were satisfied, they would fly away with big pieces of suet and nuts in their bills. How deftly they would secrete the food under the bark of neighboring maples and elms, but, do their best, the hidden food would show and after a while the trunks looked spotted as result of the birds' efforts. Presently a grey squirrel found the stores and had a fine meal.

## BIRD LISTS

The Fairbanks museum at St. Johnsbury has the following bird migration list for 1915:

Resident species: Brown creeper, chickadee, goldfinch, ruffed grouse, blue jay, white-breasted nuthatch, red-breasted nuthatch, barred owl, screech owl, northern shrike, English sparrow, downy woodpecker, hairy woodpecker, pileated woodpecker.

Snow bunting Jan. 1-Mar. 8; crow, Jan. 7-Oct. 26; white-winged crossbill, Jan. 21-Mar. 30.

Redpoll, Feb. 3-Feb. 17; pine grosbeak, Feb. 7 and May 2; pine siskin, Feb. 8-Nov. 2; cedar waxwing, Feb. 10-Oct. 20; horned lark, Feb. 24———.

Purple finch, Mar. 7-Oct. 20; junco, Mar. 8-Nov. 9; saw-whet owl, Mar. 9 and Mar. 19; bluebird, Mar. 12-Oct. 26; tree sparrow, Mar. 14-Apr. 16 and Oct. 10-29; robin, Mar. 18-Oct. 26; bronzed grackle, Mar. 28-Oct. 18.

Song sparrow, Apr. 1-Oct. 28; red-shouldered hawk, Apr. 1-Oct. 22; red-winged blackbird, Apr. 5-Oct. 17; broad-winged hawk, Apr. 8-Nov. 1; chipping sparrow, Apr. 9-Oct. 31; prairie horned lark, Apr. 9———; vesper sparrow, Apr. 10-Oct. 15; Savannah sparrow, Apr. 10-Sept. 7; flicker, Apr. 10-Oct. 28; ruby-crowned kinglet, Apr. 10-21 and Nov. 2; phoebe, Apr. 10-Sept. 30; sapsucker, Apr. 10-Oct. 8; Canada goose, Apr. 10 and 21, Nov. 6 and Dec. 6; fox sparrow, April 11 and 18, Oct. 18; cowbird, Apr. 12-Sept. 24; hermit thrush, Apr. 14-Oct. 15; meadow lark, Apr. 17-July 25; marsh hawk, Apr. 19; golden-crowned kinglet, Apr. 20-25; osprey, April 21; myrtle warbler, Apr. 21-Oct. 26; white-throated sparrow, Apr. 21-Oct. 26; kingfisher, Apr. 22-Oct. 28; field sparrow, Apr. 22-Aug. 5; great-crested flycatcher, Apr. 25-Aug. 23; grasshopper sparrow, Apr. 24———; white-eyed vireo, Apr. 25; ovenbird, Apr. 26-Aug. 31; blue-headed vireo, Apr. 27-Sept. 12; kingbird, Apr. 27-Aug. 23; bank swallow, Apr. 27-Aug. 5; pine warbler, Apr. 29-Aug. 28.

Rose-breasted grosbeak, May 2-Oct. 8; Cooper's hawk, May 2-Sept. 30; sharp-shinned hawk, May 2-Sept. 5; red-tailed hawk, May 4-Oct. 20; chimney swift, May 6-Aug. 25; black and white warbler, May 7-Sept. 5; Wilson's thrush, May 7-Oct. 1; yellow warbler, May 7-Sept. 3; redstart, May 7-Aug. 31; warbling vireo, May 8-Sept. 25; purple martin, May 9; least flycatcher, May 9-Aug. 1; oriole, May 9-Aug. 30; eave swallow, May 9-Sept. 3; tree swallow, May 9———; barn swallow, May 9-Sept. 3; yellow-throated vireo, May 9-Sept. 16; blackburnian warbler, May 9———; house wren, May 9-Oct. 2; black-throated green warbler, May 9———; black-throated blue warbler, May 9———; bay-breasted warbler, May 10; bobolink, May 10-Aug. 16; winter wren, May 10-Nov. 9; spotted sandpiper, May 10-Sept. 7; chestnut-sided warbler, May 10-Aug. 18; scarlet tanager, May 11-Aug. 31; white-crowned sparrow, May 12-23 and Oct. 26; wood pewee, May 13-Sept. 20; catbird, May 13-Aug. 16; Nashville warbler, May 13———; Maryland yellowthroat, May 13-Oct. 6; solitary sandpiper, May 14———; American goshawk, May 17; ruby-throated hummingbird, May 19-Aug. 30; red-eyed vireo, May 21-Oct. 1; Canadian warbler, May 21-July 30; least sandpiper, May 21; magnolia warbler, May 22——; olive-sided flycatcher, May 23-Sept. 5; Bicknell's thrush, May 23; red-headed woodpecker, May 23; Wilson's warbler, May 23; Tennessee warbler, May 23; indigo bunting, May 23; nighthawk, May 24-Aug. 25; black-billed cuckoo, May 25———; rusty blackbird, May 25———; parula warbler, May 27———; blackpoll warbler, May 27———; wood thrush, May 29 and July 8; Acadian flycatcher, May 29; Bohemian waxwing, May 30-Sept. 29; swamp sparrow, May 30; alder flycatcher, May 30-July 30.

Chewink, June 2-Sept. 24; sparrow hawk, June 2———; brown thrasher, June 3———; upland plover, June 3-Sept. 25; mourning warbler, June 4———; whip-poor-will, June 4———; yellow-billed cuckoo, June 6———; Cape May warbler, June 9; Connecticut warbler, June 10-July 15; American woodcock, June 30———.

Great blue heron, Aug. 16-Oct. 10; loggerhead shrike, Aug. 20-Oct. 22; black duck, Aug. 28.

American crossbill, Dec. 28.

Total, 130 species.

Miss Inez A. Howe of St. Johnsbury also sends in an individual list containing 108 species, including a number of the unusual ones recorded in the museum list. Of great interest is Miss Howe's observations on the Connecticut warbler which nested in deep cool woods near St. Johnsbury, being seen about from June 10 until July 12.

## THE MAMMALS OF VERMONT

*George L. Kirk.*

The four footed wild creatures of Vermont seem to have been neglected by nature writers. Much good work has been done by the botanists and the ornithologists but the mammals have been almost overlooked. And this is strange, taking into consideration the excellent state and local floras which have been published and the very creditable birds lists which have appeared in print to show that the state has a number of amateur naturalists who are close observers and enthusiastic to the last degree. In 1842 the venerable Zadock Thompson devoted a chapter of his famous Vermont history to mammals and it was remarkably complete, considering how few and far between scientific men were in that early day and the disadvantages under which he had to work. There have been many changes in nomenclature since Thompson's day and much biological work has been done in New England so that his list cannot at present be turned to as a catalogue of the four-footed animals of Vermont.

Dr. G. H. Perkins of Burlington in his "Report of the State Geologist, 1909-1910," gives an account of the mammals to be found in the state cabinet at Montpelier, with interesting notes as to the abundance or rarity of most of the species, and Dr. Glover M. Allen of Boston in his "Fauna of New England, No. 3," Boston Society of Natural History occasional papers, makes reference to the species found in Vermont in his general check list of all of the New England states. These papers, however, are based on such material as had found its way into museum collections and by no means give an adequate idea of the fauna of Vermont.

Realizing that there was abundant opportunity for systematic collecting Mr. Duane E. Kent of Rutland and the writer began in 1912 to make a survey of the mammalia of the state. As this has been done merely as a pastime at leisure moments, in addition to daily duties which demanded attention 51 weeks in the year, the time devoted to it has necessarily been limited and the pleasant task is by no means completed. Taking the mammal lists of adjoining states as a basis for comparison, nearly all of the species which could be expected in the Green Mountain state have been secured and it seems proper to publish the list at this time.

The writer is greatly indebted to Mr. E. W. Nelson of the United States biological survey and to Dr. Glover M. Allen for identification of material and to Mr. Kent, Mr. D. L. Dutton of Brandon, Mr. D. R.

Mahaffy of Proctor, Mr. W. E. Balch of Lunenburg and others for assistance in collecting specimens.

Cabinet skins or heads of the following are in the state museum or the private collections of Mr. Kent and the writer with the exception of one or two cases where the writer has examined hunters' skins:

*Odocoileus virginianus borealis* (Miller) G. M. Allen. Northern Virginia deer. Common in every county, even in agricultural districts. The deer were nearly exterminated a half century ago and the animals now found are largely the result of the liberation of two herds near Rutland about 1878.

*Paralces americanus* (Clinton) Allen. Moose. This animal on rare occasions strays into Vermont. There is an official report in the office of the state game commissioner of the killing of one in Wenlock, Essex county, in 1900 and deer hunters have reported sighting two or three others since that time in the northeast corner of the state.

*Sciurus carolinensis leucotis* (Gapper) Allen. Northern gray squirrel. Abundant in hardwood forests throughout the state. Rare above 2,000 feet elevation.

*Sciurus hudsonicus loquax* Bangs. Southern red squirrel. All the red squirrels collected in Vermont prove to be of this form. Former reports have credited the state with *S. h. gymnicus*, in addition to the southern form, but collections from Lunenburg in northern Essex county and from the Canadian zone on the higher slopes of Mount Killington are identical with red squirrels from the southern parts of the state and the Champlain valley.

*Tamias striatus lysteri* (Richardson) Merriam. Lyster's chipmunk. Common throughout the state and ranging to the summits of the highest mountains. Most abundant in deciduous forests.

*Marmota monax rufescens* Howell. Rufescent woodchuck. In his monograph of the marmots (North American Fauna, No. 37, U. S. Dept. Agriculture), Mr. A. H. Howell cites *Marmota monax preblorum* Howell from Rutland but all of a series of skins and skulls from points between Wallingford and Lunenburg, sent him later, are placed under the form *rufescens*. This includes a specimen taken in the Canadian zone at East Wallingford.

*Marmota monax canadensis* (Erxleben). Canadian woodchuck. Mr. Howell places a skin without skull from Mount Mansfield under this species provisionally.

*Sciuropterus sabrinus macrotis* Mearns. Canadian flying squirrel. Common in the Canadian zone and occasional in cold swamps elsewhere. Difficult to collect because of its nocturnal habits.

*Sciuropterus volans* (Linne) Jorgan. Southern flying squirrel. This is the flying squirrel most frequently met with in Vermont. It is confined to open woodlands at the lower altitudes, ranging to the Canada line in the Champlain valley. Records are incomplete as to its distribution north of Woodstock in eastern Vermont.

*Castor canadensis* Kuhl. Beaver. Practically extinct since before 1850.

*Mus musculus* Linne. House mouse. Introduced. Abundant in buildings in settled districts. Occasionally in fields. One was taken on a cold mountain brook in Sherburne two miles from a house.

*Mus norvegicus* Erxleben. Norway rat. Introduced. Common about buildings in settled districts.

*Mus rattus* Linne. Black rat. Introduced. About buildings but becoming rare.

*Peromyscus maniculatus gracilis* (Le Conte). Canadian white-footed mouse. Common throughout the state above 1,000 feet altitude. Prefers cool moist woods but frequents buildings in country districts.

*Peromyscus leucopus noveboracensis* (Fischer) Miller. White-footed mouse. Deermouse. The common white-footed mouse of the lowlands and extending north in Champlain valley to Canadian border. North to St. Johnsbury on east side of state.

*Evotomys gapperi ochraceus* Miller. Eastern red-backed mouse. Common in moist woods of Canadian zone and occasionally found in cold swamps at lower altitudes.

*Microtus pennsylvanicus* (Ord) Rhoads. Meadow mouse. Abundant in moist grassy and brushy lands at the lower altitudes. Gardner's Island in Lake Champlain at Ferrisburgh, a dry rocky tract, is overrun with this mouse to the exclusion of all others. A large male was trapped at the hotel near the summit of Mount Killington, where it was probably introduced.

*Fiber zibethicus* (Linne) Cuvier. Muskrat. Common along lakes and streams and in marshes.

*Synaptomys fatuus* Bangs. Northern lemming mouse. This elusive species is put in the Vermont list as result of the trapping of two specimens; one under matted spruces at the summit of Mount Killington by Mr. Kent and the writer and the other in a sphagnum swamp (Scan-

lon's) in the town of Leicester by Mr. D. L. Dutton and the writer. These are in the collections of Messrs. Kent and Kirk.

*Zapus hudsonius* (Zimmerman) Coues. Hudson bay jumping mouse. Common in grassy meadow lands and marshy tracts up to 2,000 feet altitude.

*Napaeozapus insignis* (Miller) Miller. Woodland jumping mouse. Abundant about cool mountain streams and moist places in the Canadian zone.

*Erethizon dorsatum* (Linne) F. Cuvier. Porcupine. Common in mountainous regions.

*Lepus americanus virginianus* (Harlan) Allen. Eastern varying hare. Widely distributed in mountain woods and in swamps at lower altitudes. Much less common than formerly in many sections where the cottontail has become common.

*Sylvilagus transitionalis* Bangs. New England cottontail. This species has spread northward rapidly in the last 20 years. On the west side of the state it is abundant to the Canadian border up to 2,000 feet altitude. On the east side it extends at least as far north as Montpelier. It is not reported from Essex county.

*Phoca vitulina* Linne. Harbor seal. This maritime species occasionally finds its way into Lake Champlain through the St. Lawrence river. Dr. Perkins cites three instances, "Burlington, 1810 and 1846; Otter creek, Weybridge, 1876." There is one in the state collection at Montpelier and one in the University of Vermont museum at Burlington.

*Felis cougar* Kerr. Panther. Probably extinct. "Specimen killed at Barnard in 1881," Dr. Perkins.

*Lynx canadensis* (Kerr) Rafinesque. Canada lynx. Formerly taken occasionally but the writer can find no reliable record of the killing of one for 20 years.

*Lynx ruffus* (Guldenstadt) Rafinesque. Bay lynx. Occasional in heavily wooded districts.

*Urocyon cinereoargenteus borealis* Merriam. Northern gray fox. This species reaches its northern limit in central Vermont, being taken at rare intervals in the transition zone as far north as Whiting on the west side and Woodstock on the east side of the state.

*Vulpes fulvus* (Desmarest) De Kay. Red fox. Common throughout the state, the black and cross phases being occasionally seen.

*Lutra canadensis* (Shreber) Sabine. Otter. Along mountain streams, becoming rare. East Wallingford, 1914; Weston, 1915.

*Mephitis putida* (G. Cuvier) Allen. Eastern skunk. Abundant in pastures and open woodlands throughout the state.

*Putorius vison* (Shreber) Gapper. Mink. Formerly common along streams and lakes everywhere but becoming infrequent because of persistent trapping for its fur.

*Putorius cicognani* (Bonaparte) Richardson. Little brown weasel. The common weasel in Vermont. Found at all altitudes.

*Putorius noveboracensis* Emmons. New York weasel. Much less frequent than the preceding and more confined to the transition zone. Apparently absent from some sections, as about Rutland.

*Mustela americana* Turton. Pine marten. Frequents highest spruce covered mountain ridges. Nearly extinct. The writer saw a specimen killed in Chittenden in 1900. A deer hunter secured one in Glastenbury in November, 1915.

*Mustela pennanti* Erxleben. Fisher. Another fur bearer which is rapidly being exterminated and is confined to the wildest mountain districts. The writer has seen the tracks of one in Sherburne and another in Mendon within three years.

*Procyon lotor* (Linne) Storr. Raccoon. Common in deciduous woods about lakes and along streams.

*Ursus americanus* Pallas. Black bear. Occasional in the mountains throughout the state.

*Sorex personatus* I. Geoffroy. Masked shrew. Common in swamps and moist woods from the level of Lake Champlain to the highest mountain summits.

*Sorex fumeus* Miller. Smoky shrew. Occasional in cool mossy woods of the Canadian zone and rarely in sphagnum bogs; "Scanlon's," Leicester; "Cedar," Rutland.

*Sorex hoyi* Baird. Hoy's shrew. Only one Vermont record. The specimen was taken at Burlington by Zaddock Thompson and is in the state collection.

*Sorex dispar* Batchelder. Two specimens of this rare shrew have been taken in Vermont. One was trapped by Dr. Glover M. Allen at Bridgewater and the other by Mr. Kent and the writer near the summit of Mount Killington, the first collection being made in May, 1913.

*Sorex albibarbis* (Cope) Merriam. White-lipp'd shrew. Local along mountain streams and about ponds, mainly in the Canadian zone; Sherburne, Mendon, Goshen, Wallingford, Rutland. Mr. Kent made a large collection of this shrew at Spectacle pond in East Wallingford.

*Blarina brevicauda talpoides* (Gapper) Bangs. Short-tailed shrew. Abundant in woods and fields, preferring moist situations.



*Parascalops breweri* (Bachman) True. Brewer's mole. In fields and open woods above 1,000 feet altitude. Frequent drier situations than the star-nosed mole.

*Condylura cristata* (Linne) Desmarest. Star-nosed mole. Abundant in moist meadows and marshes and extending well up into the mountains in suitable places. Mr. Kent took both species of moles in the same tunnels at Spectacle pond.

*Myotis lucifugus* (Le Conte) Miller. Little brown bat. Abundant throughout the state.

*Myotis winnemana* Nelson. Least brown bat. This species was described by Mr. E. W. Nelson (Proc. Biological Soc., Wash.; vol. xxvi, pp. 183-4) as the result of the collection of a few specimens by Mr. D. R. Mahaffy of Proctor in Nickwacket cave, Chittenden, in January, 1913. It had previously been confused with the little brown bat. Subsequent examinations of collections showed two from Maryland in the biological survey collection and several from New England in the Museum of Comparative Zoology at Cambridge, Mass.

*Myotis subulatus* (Say) Miller. Much more local than the preceding. Mr. Kent and the writer have taken but two specimens, both in Chittenden.

*Lasionycteris noctivagans* (Le Conte) Peters. Silver-haired bat. One of the most common bats of the state.

*Pipistrellus subflavus obscurus* Miller. Northern pipistrell. Collected so far in Vermont only from caves in Chittenden, where it was first discovered in 1915 by Mr. D. R. Mahaffy of Proctor. It reaches its northern limit in New England.

*Vespertilio fuscus* Beauvois. Large brown bat. Common in the transition zone, preferring low moist woods. Frequently seen in villages.

*Lasiurus borealis* (Muller) Miller. Red bat. Occasional in the transition zone. Rare in Canadian zone.

*Lasiurus cinereus* (Beauvois) H. Allen. Hoary bat. This migratory species should be found breeding in the Canadian zone throughout the state but, although Mr. Kent and the writer have frequently watched, gun in hand, in favorable situations a good many evenings, they have failed to see a specimen. It may be expected along water courses during migrations. The only Vermont specimen of which there is a record is one taken at Colchester soon after 1840 and presented the state collection by Zadock Thompson.

## SPECIES NEW TO VERMONT.

Species included in the above list which have not been accredited to the state in any previous publications are: *Synaptomys fatuus*, *Urocyon cinereoargenteus borealis*, *Sorex fumeus*, *Sorex albibarbis*, *Sorex dispar*, *Myotis winnemana*, *Pipistrellus subflavus obscurus*.

## SPECIES TO BE LOOKED FOR.

*Microtus chrotorrhinus* (Miller) Bangs, the rock vole, has been taken in the White, Adirondack and Catskill mountains among moist rocks at high altitudes and is to be expected in Vermont on the highest peaks of the Green Mountains. The little known long-tailed weasel, *Putorius occisor* Bangs, may occur in northern Essex county.

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 BOTANICAL NOTES

A large specimen of *Botrychium obliquum* var. *ternatum* was collected by Leston A. Wheeler at Newfane, having not only the frond of the season but that of the previous year, in good condition.

A beautiful crisped form of *Aspidium spinulosum* var. *intermedium* was collected near Williamsville station by Mr. Wheeler.

A single plant of *Elymus canadensis* var. *glaucofolius*, which was brought to Mr. Wheeler's attention by F. T. Randall, measured seven feet and 10 inches in height and had a spike eight and a half inches long.

Mrs. Nellie F. Flynn of Burlington collected *Silene dichotoma* on the beach at Starr farm, Burlington, near newly seeded land, in 1915.

Miss Ella Munsell sends the following interesting list of plants found in blossom at Wells River between October 1 and October 31, 1915: Red raspberry, twin flower, herb Robert, yarrow, white daisy, erigeron, strawberry, bluets, goldenrod, white and purple violets, harebells, false Solomon's seal, cinquefoil, mullein.

Dana S. Carpenter reports *Carex alopecoidea* Tuckerman and *Carex cephaloidea* Dewey from Middletown Springs. These carices are uncommon in Vermont.

The last week in April, 1915, there were several days of midsummer heat at Rutland and the effect on vegetation was very marked, several

plants blossoming a full month ahead of time. *Trillium grandiflorum*, (Michx.) Salisb. usually in its prime May 20 to Memorial day, was in full bloom April 29 but, instead of topping plants 12 to 16 inches high, the big flowers were, on the average, only four inches above the leafy carpet of the forest. *Viburnum alnifolium* Marsh, another plant to put forth flowers in late May, bore full blown cymes on well leaved branches instead of on nearly naked ones as is usual. Most of the deciduous trees were well leaved on the date mentioned.

Mrs. Emily Hitchcock Terry of Northampton, Mass., writes that Dr. B. L. Robinson has identified one of several ferns collected by her at Dorset as *Asplenium simulatum* Davenp. This is a considerable extension of the range in Vermont of this rare fern.

The moss *Tetraplodon broides* (Zoega) Lindb. has been collected on Mount Killington by Mr. Kirk. It has heretofore been reported in Vermont only from Mount Mansfield, A. J. Grout.

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## BIRD NOTES

The golden-winged warbler (*Vermivora chrysoptera*) was located in the bushes near Muddy Pond, on Pine Hill, Rutland, by Mr. D. E. Kent, May 30, 1915. Mr. Kent reports that the probabilities are that this bird has nested in this vicinity for a number of years. This is the only record we have at hand for this bird for Vermont.

A large flight of Tennessee warblers are reported for Rutland in 1915. The first birds appeared May 23. They were more abundant about the residential streets than in the country outside the city. They were frequent again in 1916.

A male bay-breasted warbler was observed by Mr. Charles Sheldon of New York, Mr. G. H. Ross and Mr. George L. Kirk of Rutland at Barnard, June 9, 1915. The bird was a male in full breeding plumage. The location was spruce woods at an elevation of 2,500 feet. No nest was found, and the bird may have been a delayed migrant as no records of nesting for this bird are found in Vermont. The late date would indicate breeding, however.

Mr. G. L. Kirk has the skin of a fine specimen of a male hawk owl taken at Derby, Nov. 11, 1915, a rough-winged swallow taken at Rutland May 20, 1916 and a Philadelphia vireo taken at Rutland May 24, 1916.

A great horned owl was found incubating her eggs, by Mr. G. H. Ross, Mr. G. L. Kirk and Mr. D. E. Kent at Rutland, March 12, 1916. The nest was located in a pine tree, 45 feet from the ground. The ground was covered with snow, and the snow was piled several inches about the nest. The thermometer registered 10 degrees below zero. The nest contained two eggs.

A black-billed cuckoo was found on a nest containing three eggs as late as August 29, by Mr. E. J. Briggs of Rutland. This is a record for late breeding, as this bird usually leaves this locality early in September.

Evening grosbeaks are reported for the past winter from a number of places in Vermont. They remained several weeks in the vicinity of Rutland. They were also observed in Middlebury, Burlington, Londonderry, Clarendon, Hartland, Brandon and St. Johnsbury. The last bird was seen at Rutland, May 17.

The nest of an American goldeneye was found at Averill, in 1915, by Mr. Owen Durfee of Fall River, and Mr. F. H. Kennard of Boston, Mass. This is probably the first breeding record for this bird in the state.

Miss Mary E. Jennison reports the presence of bay-breasted warblers at St. Albans, May 29-31, together with myrtle warblers and olive-backed thrushes. The same observer reports an unusual number of scarlet tanagers for that locality during the past year. She also found young juncos and white-throated sparrows in a woodlot on Aldis Hill as late as August 15, an indication that these birds breed in that locality. The same report includes a notice of the evening grosbeaks which stayed two or three days about the middle of March, the flock being a small one, containing three females and one male.

Winter birds are reported much more numerous about St. Johnsbury this year than in previous years. White-winged crossbills, American crossbills, redpolls, and snow buntings, having been observed in various parts of the town. Miss Inez A. Howe reports that chickadees, a pair of red-breasted nuthatches, a white-breasted nuthatch, and a pair of blue jays came daily to the food shelves. Mrs. Edward Fairbanks records a brown creeper, a pair of downy woodpeckers, and a tree sparrow which have been spending the winter in the vicinity. In one of the rural schools, where the children are interested in the birds, the chickadees have become so tame that they come to the window-sill and eat from the children's hands.

The following uncommon birds are reported for St. Johnsbury by Mr. W. E. Balch: May 2, a flock of pine grosbeaks numbering from 150-200 individuals; on May 9, a flock of purple martins; May 23, a pair of Bicknell's thrushes; June 3, a brown thrasher; June 4, three mourning warblers; June 6, a yellow-billed cuckoo, all unusual for this vicinity.

Miss Howe reports, additionally, the following for St. Johnsbury: Pine siskins, classed as winter visitors for that locality, nested there in 1915, and lingered all summer. A winter wren was heard singing all summer, and came to the food shelf the first nine days of November. Two young rose-breasted grosbeaks were seen on August 6. On May 30, seven Bohemian waxwings were seen eating seeds of the elm in East St. Johnsbury; the day following they were reported from Lyndon by Miss Clara Wilmarth. It is evident that they nested in that place as a young bird was brought to Miss Wilmarth on September 20. A pair of chewinks were found nesting in one of the rural school districts, June 2, and on September 24, two adults, with four young, were observed in the same vicinity. This is the first report of this bird in St. Johnsbury.

Mrs. A. B. Morgan reports the following for Woodstock and vicinity: The bird census for the "Highlands" recorded 79 breeding pairs to 92 acres. The prairie horned lark nested on the farm for the first time, so far as is known. On June 2 the song was heard which was recognized as similar to that heard on the plains near Denver, Col. Soon after the horned lark was found walking about in the grass, uttering a low-pitched, purring note, quite different from the flight song. The wood thrushes are evidently moving along the range, one pair nesting in the "back lot" this year for the first time.

A kingfisher wintered on the banks of the Ottauquechee. On January 11, during a five-mile drive, three large flocks of snow buntings were seen.

On May 23, a fine specimen of Swainson's hawk was taken in Hartland village. It was 19 inches in length, and in the dark phase, closely resembling the rough-legged hawk. This species is seldom taken east of the Mississippi.

Mr. G. L. Kirk reports hearing the song of the long-billed marsh wren at midnight. He says: "It is not uncommon for birds to utter brief snatches of song during the night, but, with few exceptions, these songs are not to be compared with their natural songs of the daytime. It was

the writer's privilege, on July 25, 1915, to hear a large number of long-billed marsh wrens in full song in the middle of the night. For the purpose of fishing for bullheads, I went by boat to Little Otter Creek, where it winds through a large marsh just before emptying into Lake Champlain at Ferrisburgh. The night was perfectly clear and still and there was a full moon. The fishing party were on the creek from 9 o'clock until nearly 12, and every minute the birds were in full song. There were scores of them, all singing with the same vim that might be expected of them at sunrise. Part of another evening was spent in the same place a few nights later while the moon was still bright, and the birds were singing as before."

Mr. A. E. Tuttle of Bellows Falls has submitted the suggestion that all cemeteries should be made "bird sanctuaries," and that a law should be enacted requiring that all cats should be licensed, or muzzled during the summer.

