A COÖPERATIVE BIRD CENSUS AT WASHINGTON, D. C.

BY HARRY C. OBERHOLSER.

The importance of counting the actual numbers of birds over given areas, particularly during the breeding season, has been already amply demonstrated. Censuses of the birds present during the height of the spring migration are also of considerable value, both as a basis for comparison of the relative numbers of the various species in the same year, and of the same species in different years. Series of such observations taken throughout the migration season would give a pretty good idea of the volume of the migration; and a series extending through a number of different years would show its fluctuations, which, as we already know, are often considerable. It is practically impossible for a single person to make satisfactory observations of this kind, except over a very limited area, and the best results are undoubtedly obtainable by the coöperative work of a number of persons.

The writer, with the assistance of fifteen other ornithologists, planned a census of this kind in the vicinity of Washington, D. C. As may be seen from the accompanying list, so many ornithological experts have rarely been engaged on a similar task at any one time. The day chosen was May 12, 1913, which date in May may be considered the height of the spring migration for the vicinity of Washington. Weather conditions proved propitious, the day being bright and clear with a rather chilly northeast wind. The country investigated consisted of the region within 20 miles of the city of Washington, and comprised the valleys of the Potomac and Anacostia rivers, together with their tributary streams and the adjacent uplands. The routes of the various parties, 13 in number, were laid out so as to cover the country in all directions from Washington. This section consists of the wide wooded valleys of the Potomac and the Anacostia rivers, along which

there are in places rather extensive areas of bottomland, mudflats, and marshes; the numerous small timbered streams tributary to both these rivers; and the rolling upland farms interspersed with more or less extensive areas of woodland. The timber in this region is almost entirely second growth, although in some places the trees reach a considerable size. Most of the woods are deciduous, but there are groves of pines in many places and a few scattered hemlocks along the river bluffs.

Our careful bird survey indicated that 1913 was not a very good year for birds, but the results are, nevertheless, from several standpoints, decidedly interesting. One fact of distribution stands out clearly, which is that the best places for birds about Washington lie almost all in the more or less immediate valley of the Potomac and Anacostia rivers, including, of course, the many small streams that intersect their banks.

On this day the total number of species observed was 129; of individuals actually counted, 12,257; though, since one of the parties made no count of individual birds, this latter number is really too small. That the number of species seen is by no means as great as could be reasonably expected, notwithstanding the fact that Washington is not a particularly good place for birds, is evident from an examination of the list, which shows that there are several species of water birds (particularly ducks, of which there is not one in the list), shore birds, hawks, owls, flycatchers, warblers, sparrows, and a few others, which might reasonably have occurred. This absence of certain species must be accounted for by the fact that certain unknown conditions were unfavorable for birds, rather than by the lack of careful search, since the work was thoroughly done by all the parties concerned.

The six most numerous species, in the order of their abundance, were as follows: English sparrow, barn swallow, tree swallow, song sparrow, chimney swift, and catbird — rather an unexpected list.

The sixteen species least numerous, and of which only a single individual was noted, are included in the following list:

great blue heron, sharp-shinned hawk, marsh hawk, king rail, woodcock, great-horned owl, nighthawk, red-breasted nuthatch, solitary vireo, yellow palm warbler, bay-breasted warbler, northern parula warbler, Nashville warbler, blue-winged warbler, blue grosbeak, and Bachman sparrow.

The nineteen species of most general distribution, as evidenced by the fact that they were observed by all the parties in the field, may be listed as follows: turkey vulture, bob-white, flicker, chimney swift, crested flycatcher, brown thrasher, catbird, southern robin, wood thrush, house wren, tufted titmouse, red-eyed vireo, yellow-breasted chat, scarlet tanager, cardinal, chewink, song sparrow, chipping sparrow, and English sparrow.

In addition, the following twelve others were noted by every party except one: kingbird, Carolina wren, Carolina chickadee, blue jay, southern crow, white-eyed vireo, American redstart, Maryland yellow-throat, oven-bird, purple grackle, field sparrow, and American goldfinch.

An analysis of the various lists shows that a number of species, in addition to those of usually special distribution, such as water birds and shore birds, were confined on this date largely or wholly to the valleys of the rivers and the larger streams. Such species were: barn swallow, bank swallow, rough-winged swallow, American redstart, hooded warbler, Maryland yellow-throat, northern water-thrush, prairie warbler, black-poll warbler, black-throated green warbler, black-throated blue warbler, cardinal, song sparrow, and white-throated sparrow.

Two species which have been increasing in numbers about Washington during the past few years were noted on this occasion — the mockingbird, which was common, and the migrant shrike, which was tolerably common.

Of the rarer birds of the District of Columbia there were found the king rail, red-bellied woodpecker, great horned owl, Cape May warbler, blue-winged warbler. Bachman sparrow, and Henslow sparrow.

Several migrant birds, for which May 12 is an unusually late date, were also observed, as noted below, the dates after each being the latest known previous records for this region:

Greater yellow-legs, May 16,
Least sandpiper, May 15,
Red-breasted nuthatch, May 12,
Solitary vireo, May 18.

For three other species the latest record of spring occurrence was extended, these species with their previously recorded dates being as follows:

Pied-billed grebe, April 24,
Yellow-legs, May 11,
Yellow palm warbler, May 1.

The itinerary of each of the thirteen parties engaged in this survey was as follows:

1.—Great Falls, Virginia: By electric car from Washington, D. C., to Great Falls and return. Traveled on foot, 14 miles in the region about Great Falls on the Virginia side of the Potomac river. Total distance traveled, 46 miles. Time in field, 4:00 a. m. to 8:40 p. m. Total number of species observed, 82; individuals, 623. A. Wetmore.

2.—Washington, D. C., to Great Falls, Maryland: By automobile to Great Falls and return. Total distance traveled, 32 miles. Time in field, 7:00 a. m. to 5:00 p. m. Total number of species observed, 68; individuals, 728. V. Bailey and Mrs. V. Bailey.

3.—Valley of the Potomac river in Virginia, from Elkins and Difficult Run to Chain Bridge; and the District of Columbia, from Fox Hall Road to Observatory Heights, D. C.: By electric car from Washington, D. C., to Elkins, Virginia. Traveled on foot, 22 miles, from Elkins, Virginia, to Observatory Heights, D. C. Total distance traveled, 55 miles. Time in field, 4:00 a. m. to 8:00 p. m. Total number of species observed, 73; individuals, 701. E. A. Preble and W. L. McAtee.

4.—Potomac Valley, on the Virginia side, from Georgetown,

D. C., to Chain Bridge, Virginia; and on the Maryland side, from Chain Bridge, D. C., to Cabin John Bridge, Maryland: By electric car from Washington, D. C., to Georgetown, D. C., and Cabin John Bridge to Washington. Traveled on foot, 18 miles, from Georgetown, D. C., to Cabin John Bridge, Maryland. Total distance traveled, 32 miles. Time in field, 4:15 a. m. to 5:55 p. m. Total number of species observed, 75; individuals, 914. H. H. T. Jackson.

5.—Arlington, Fort Myer, and Rosslyn, Virginia, to the Virginia end of the Long Bridge over the Potomac: By electric car from Washington, D. C., to Rosslyn and return. Traveled on foot, 15 miles, Rosslyn to Arlington, Fort Myer, and the Long Bridge. Total distance traveled, 20 miles. Time in field, 3:50 a. m. to 8:00 p. m. Total number of species observed, 66; individuals, 2,105. E. A. Mearns.

6.—Dyke, Fairfax County, Virginia: By electric car from Washington, D. C., to Dyke and return. Traveled on foot about 10 miles in the vicinity of Dyke. Total distance traveled, 34 miles. Time in field, 8:00 a. m. to 6:00 p. m. Total number of species observed, 66; individuals, 516. W. Palmer.

7.—Western side of Anacostia River Valley, from Anacostia, D. C., to Benning, D. C.: By electric car from Washington, D. C., to Anacostia, D. C. Traveled on foot, 5 miles, from Anacostia to Benning, D. C. Total distance traveled, 13 miles. Time in field, 4:03 a. m. to 8:50 a. m. Total number of species observed, 58; individuals, 1,382. W. D. Appel.

8.—Rock Creek Park; and the Anacostia River Valley from Benning, D. C., to Bladensburg, Maryland: By electric car from Rock Creek Park to Anacostia, D. C., and return. Traveled on foot in Rock Creek Park and in the Anacostia Valley, six miles; by rowboat, Benning to Bladensburg and return, 11 miles. Total distance traveled, 29 miles. Time in field, 4:00 a. m. to 9:00 p. m. Total number of species observed, 91; individuals, 3,049. Harry C. Oberholser.

9.—Woodridge, D. C., to Beltsville, Maryland; and Laurel, Maryland: By electric car from Beltsville to Laurel, Maryland, and Laurel to Woodridge, D. C. Traveled on foot, 15

miles, from Woodridge, D. C., to Beltsville, Maryland, and about Laurel, Maryland. Total distance traveled, 35 miles. Time in field, 4:10 a. m. to 7:00 p. m. Total number of species observed, 61; individuals, 790. E. R. Kalmbach.

10.—Woodridge, D. C., via Northwest Branch, to Burnt Mills and Forest Glen, Maryland: Traveled on foot, 13 miles, Woodridge, D. C., to Forest Glen, Maryland. By electric car, Forest Glen to Woodridge. Total distance traveled, 25 miles. Time in field, 4:05 a. m. to 7:00 p. m. Total number of species observed, 71; individuals, 748. A. H. Howell.

11.—Valley of Rock Creek, D. C.: Traveled on foot, 6 miles in Rock Creek Valley. Total distance traveled, 6 miles. Time in field, 5:15 a. m. to 10:30 a. m. Total number of species observed, 34; individuals, 260. E. J. Brown.

12.—Lanham, Maryland, to College Park, Maryland: Traveled on foot, 5 miles, Lanham to College Park, Maryland. Total distance traveled, 5 miles. Time in field, 6:00 a. m. to 11:45 a. m. Total number of species observed, 58; individuals not counted. W. R. Maxon and T. H. Kearney.

13.—Falls Church, Virginia: Traveled on foot 12 miles, in the vicinity of Falls Church. Total distance traveled, 12 miles. Time in field, 5:55 a. m. to 5:45 p. m. Total number of species observed, 51; individuals, 538. J. H. Riley.

The following tables gives in graphic form the number of each species observed by each party; also the total number of each species observed by all the parties during the day; as well as the other totals given above:

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Podilymbus podiceps podiceps					2									2
Nycticorax nycticorax naevius	1	80	12	21	2		8	4	1					129
Butorides virescens virescens	1					2								3
Ardea herodias herodias					1									1
Cathartes aura septentrionalis	16	45	81	26	13	13	10	23	21	33	10	+	6	297+
Cerchneis sparveria sparveria				1	1							1	1	4
Buteo lineatus lineatus				1		2			2					5
Buteo platypterus platypterus		1			1								1	3
Accipiter cooperii			1		1									2
Accipiter velox			1											1
Circus hudsonius												1		1
Colinus virginianus virginianus	5	11	8	2	6	3	12	5	7	5	1	+	4	69+
Rallus elegans						1								1
Totanus melanoleucus								5						5
Totanus flavipes								5						5
Tringa solitaria solitaria					2			1	1	1				5
Actitis macularia	6		2	12	7	4	12	26	3	1				73
Ereunetes pusillus								9						9
Pisobia minutilla								3						3
Philohela minor						1								1
Oxyechus vociferus vociferus		1					2	2						5
Zenaidura macroura carolinensis	10	8	6	3	7	2		2	17	8		+	12	75+
Coccyzus americanus americanus	1	3		1		2					1			8

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Coccyzus erythropthalmus	2													2
Colaptes auratus luteus	14	4	6	1	13	5	6	7	4	5	3	+	3	71+
Centurus carolinus	5													5
Melanerpes erythrocephalus		4	1					6	7	2	1			21
Dryobates pubescens medianus	1	1	2		8			1		1		+		14+
Dryobates villosus villosus	2		1					2	1		1			7
Streptoceryle alcyon alcyon				1	1		2	1	3	1				9
Bubo virginianus virginianus	1													1
Strix varia varia			1			1								2
Chordeiles virginianus virginianus	1													1
Archilochus colubris	1	1	1					1	2					6
Chaetura pelagica	14	49	69	24	42	46	11	82	21	20	100	+	25	503+
Horizopus virens	13	11	3	4	18	3	4	4	5	9		+		74+
Empidonax virescens		2		3	4	3	1	4		1	4			22
Empidonax minimus	2			1				1						4
Sayornis phoebe	1	10	5	6	4	4			3	5	4	+	2	44+
Myiarchus crinitus	14	6	8	3	11	8	5	21	2	9	2	+	6	95+
Tyrannus tyrannus	2	12	9	2	1	4	3	3	4	7		+	1	48+
Toxostoma rufum	1	8	6	1	7	8	18	5	4	11	10	+	3	82+
Mimus polyglottos polyglottos	1	2	6		2		1	4	1	5			1	23
Lucar carolinensis[1]	4	25	24	42	113	19	59	59	50	37	10	+	50	492+
Sialia sialis sialis	6	3	7				3	1	10	5		+		35+
Planesticus migratorius achrusterus	4	20	8	4	18	1	15	10	14	34	1	+	12	141+

[1] The latest name for *Dumetella carolinensis*.

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Hylocichla fuscescens fuscescens		4			1	4	2	1					1	8
Hylocichla aliciae aliciae					4			5						14
Hylocichla ustulata swainsoni	9		3	2	2	3		4		4				27
Hylocichla mustelina	30	7	12	10	69	3	18	48	18	24	3	+	10	252+
Polioptila caerulea caerulea	2			1			1	4	2					10
Troglodytes aedon aedon	3	10	9	18	27	6	13	6	36	22	6	++	2	158+
Thryothorus ludovicianus ludovicianus	13	13	11	5	16	2	8	2	13	6	2			91
Telmatodytes palustris palustris					47	28	30	34						139
Sitta canadensis	1													1
Sitta carolinensis	2			1					1	1		+		5+
Penthestes carolinensis carolinensis	5	8	4	1	2	4	1	5	6	1	3	+++		40+
Baeolophus bicolor	5	6	9	1	4	6	7	13	14	7	4	++	10	86+
Cyanocitta cristata cristata	18	6	10	4	3	4	8	14	6	15		+	25	113+
Corvus ossifragus	2	2	6	1	23	3	7	36	21	9	12			122
Corvus brachyrhynchos paulus	10	17	19	16	94	19	19	46	45	33		+	25	343+
Lanius ludovicianus migrans		3	1					2		1				7
Vireo griseus griseus	2	2	9	2	8	18	16	5	13	3		+	3	81+
Lanivireo solitarius solitarius													1	1
Lanivireo flavifrons	9	5	3	4	8	4	4	6	6	5		+		54+
Vireosylva gilva gilva	1			3					1	2				7
Vireosylva olivacea	54	24	45	32	64	18	21	47	32	25	10	+	8	380+
Bombycilla cedrorum	1						1							2
Iridoprocne bicolor					60		550	421				+		1031+

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Hirundo erythrogastris	2	8	2	2	3		6	1073	19	7			1	1123
Riparia riparia riparia			2			2		3						7
Stelgidopteryx serripennis	9	9	5	32	22	2	90	471						540
Petrochelidon lunifrons lunifrons						1	1			3				5
Progne subis subis	4	2						2						8
Setophaga ruticilla	23	22	7	45	54	14	18	26	12	8		+	2	231+
Wilsonia canadensis				1		1		3	3					8
Wilsonia pusilla pusilla				1									1	2
Wilsonia citrina	4	1	6	2				2		1	1			17
Icteria virens virens	17	15	8	2	13	11	8	4	20	12	5	+	12	127+
Geothlypis trichas trichas	3	23	6	11	77	14	18	15	42	17		+	6	232+
Oporornis formosus	11	2	5	2		4		6		3				33
Seiurus noveboracensis noveboracensis				3				1						4
Seiurus motacilla	10	1	1	1	4			1	1	1				20
Seiurus aurocapillus	19	12	11	6	11	8	7	28		25	10	+	50	187+
Dendroica palmarum hypochrysea				1										1
Dendroica discolor	12	13	11	1	3	5				1		+	1	47+
Dendroica vigorsii vigorsii	1				2	1						++		4+
Dendroica striata	1	7	7	1		1	17	34	4			+	1	73+
Dendroica castanea			1											1
Dendroica pensylvanica	2		1					5				+		8+
Dendroica dominica dominica					1	1		1	1					4
Dendroica fusca	3							3			1			7

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Dendroica virens	1			1				10		1		+	2	15+
Dendroica coronata coronata	33		2	1			11	5		1		+	100	153+
Dendroica caerulescens caerulescens	1		3	11		1		8	2	1		+	3	30+
Dendroica tigrina	3		2	2		1		8					30	46
Dendroica magnolia			1	3				2						6
Dendroica aestiva aestiva	2	2	12	2	36	3	15	15	22	4	6	+		119
Compsothlypis americana americana	23	4	7	8		10	1	5			4		3	65+
Compsothlypis americana usneae								1						1
Vermivora ruficapilla ruficapilla						1								1
Vermivora pinus				1										1
Helmitheros vermivorus	2	3	3	2	1			1		1	2			15
Mniotilta varia	2	1	9	4				13	4	1		+	6	40+
Dolichonyx oryzivorus		6	15	2	5	5	4	3	7	17				17
Sturnella magna magna	2									13		+		62+
Agelaius phoeniceus predatorius	1		15	2	5	16	10	19	1	4				51
Icterus galbula	2	3		2				1	1	4		+		13+
Icterus spurius	2		4	1	6	4	2	2		4			1	26
Quiscalus quiscula quiscula	4	33	2	22	30	34	37	18	31	41		+	12	264+
Molothrus ater ater				3				1	3	7				14
Piranga erythromelas	24	10	10	6	4	3	6	7	3	9	4		6	92+
Piranga rubra rubra		1			2			1		1		+		5+
Cardinalis cardinalis	18	11	25	10	17	6	22	24	17	15	4	+	12	181+
Hedymeles ludovicianus[1]	2		1	1				6		1				11

[1] The proper name for *Zamelodia ludoviciana*.

Species.	Wetmore	Bailey	Preble & McAtee	Jackson	Mearns	Palmer	Appel	Oberholser	Kalmbach	Howell	Brown	Maxon & Kearney	Riley	Totals
Guiraca caerulea caerulea		1												1
Linaria cyanea[1]	17	9	9	1			1	6		9	3	+	6	61+
Pipilo erythrophthalmus erythrophthalmus	6	5	14	4	19	7	12	22	21	20	12	+	25	167+
Melospiza georgiana					21									21
Melospiza melodia melodia	8	26	27	30	179	20	65	65	40	32	6	+	6	504+
Zonotrichia albicollis	5	2	6	12	12		4	5	3			+	4	53+
Spizella pusilla pusilla	6	8	12	2	12	10	19	4	19	9		+	4	105+
Spizella passerina passerina	19	29	26	5	5	5	4	4	12	16	4	+	12	141+
Peucaea aestivalis bachmanii												1		1
Passerherbulus henslowii henslowii						4							1	5
Ammodramus savannarum australis		1	2			3				2		+	1	9+
Pooecetes gramineus gramineus		1								1		+		2+
Passer domesticus hostilis	11	28	13	400	812	54	104	105	87	81	10	+	6	1721+
Astragalinus tristis tristis	12	15	14	7	37	10	22	14	18	7		+	12	168+
Total number of species	82	68	73	75	66	66	58	91	61	71	34	58	51	129
Total number of individuals	623	728	701	914	2105	516	1382	3049	790	748	260	3+	538	12257+

[1] The latest name for *Passerina cyanea*.