FREQUENCY OF OCCURRENCE OF BIRDS IN ALUM ROCK PARK, SANTA CLARA COUNTY, CALIFORNIA

WITH TWO GRAPHS

By JEAN M. LINSDALE and THOMAS L. RODGERS

Alum Rock Park, in the foothills of the Mount Hamilton Range, eight miles northeast of San Jose, California, occupies a canyon which in many ways typifies the hilly part of central California. Recently we were given opportunity to analyze bird records kept by several observers on 138 field trips to this park. From these we have determined the frequency index of each species, and we present the results here as indicating satisfactorily the ranking of the birds according to relative frequency of occurrence in this neighborhood. For the records we are indebted to the following persons whose notes were used for the numbers of days indicated: James Peterson, 99; Gayle B. Pickwell, 28; Miss Emily Smith, 10; Tom Rodgers, 1. The time covered extends from the spring of 1929 to the fall of 1936. Sometimes only part days were represented, and for most of the lists there was no anticipation that they would be used for the present purpose. Field days by months numbered as follows: January 8; February, 12; March, 11; April, 12; May, 11; June, 15; July, 7; August, 17; September, 9; October, 16; November, 5; December, 15.

This park contains approximately one thousand acres, and it is located in an east-west running canyon with a small permanent stream. The park occupies about three miles of the canyon and varies in width up to half a mile. The mouth of the canyon opens out to grass-covered hills having scattered California sage and baccharis; the stream sinks into the floor of the valley except in time of flood. Near the upper end of the park the canyon becomes narrow and steep, with about six hundred feet of fall in less than a mile. The south-facing slope of the canyon is covered with chaparral, with a few scattered digger pines on the ridges and scrubby live oaks in the draws. The north-facing slope is much the moister, with scattered valley and live oaks and, in the upper, steeper part of the canyon, digger pines and a few black oaks. California laurel, poison oak, coffee berry, and buckeye are also common, especially within a few hundred feet of the stream. On the canyon bottom there is a mixture of canyon and valley stream flora—white alder, big-leaf maple, elderberry, sycamore, willow, and live oak, with an undergrowth of wild blackberry, and tangles of wild cucumber and clematis along the stream and through the brush. In the wider parts of the canyon floor there are several cleared recreation areas, two buildings housing amusement concessions, and many picnic tables.

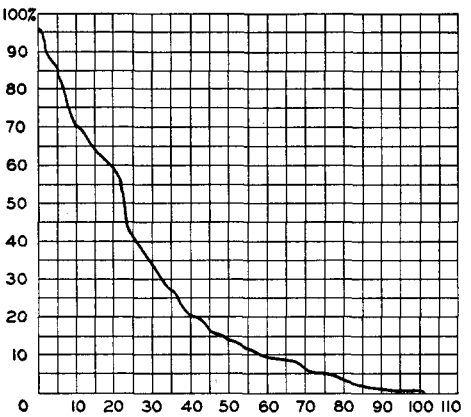

Fig. 34. Graph showing relative frequency of occurrence of the 101 species of birds recorded in Alum Rock Park, California.

In the list which follows, the per cent of frequency was determined for each bird by dividing the number of days that bird was recorded by the whole number of trips to the area. This simple procedure reduces an unwieldy set of numbers to one

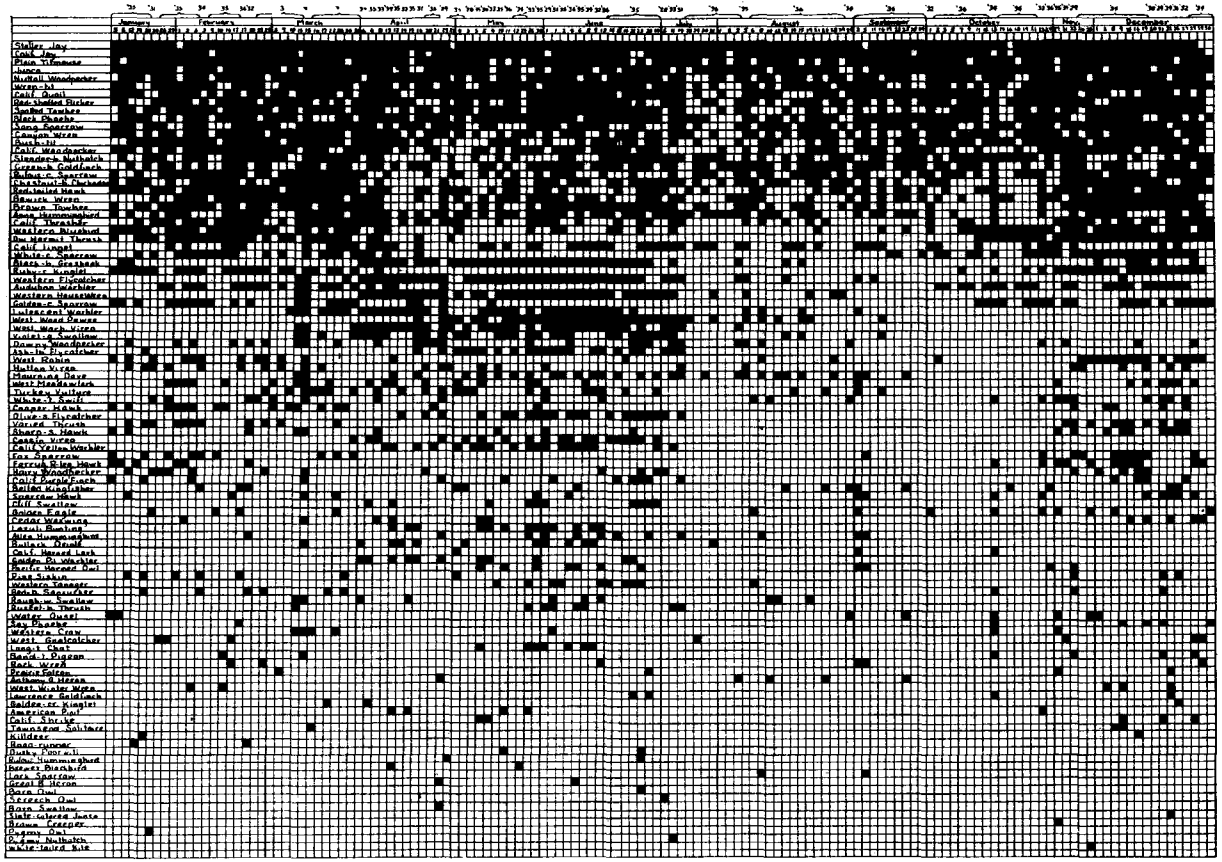

Fig. 35. Chart showing days (marked in black) on which each species was recorded in Alum Rock Park, California.

that gives good basis for comparison of the species not only in this list but with similar rankings in other localities. (See figs. 34 and 35.)

List of species recorded from Alum Rock Park, arranged in order of abundance, with per cent of frequency for each.

		per cent
1	Steller Jay	96
2	California Jay	91.5
3	Plain Titmouse	87
4	Oregon Junco	85
5	Nuttall Woodpecker	78.5
6	Wren-tit	78
7	California Quail	76.5
8	Red-shafted Flicker	74
9	Spotted Towhee	70.5
10	Black Phoebe	70
11	Song Sparrow	70
12	Canyon Wren	68
13	Bush-tit	67.5
14	California Woodpecker	64
15	White-breasted Nuthatch	64
16	Green-backed Goldfinch	62
17	Rufous-crowned Sparrow	61.5
18	Chestnut-backed Chickadee	61
19	Red-tailed Hawk	60
20	Bewick Wren	59.5
21	Brown Towhee	59.5
22	Anna Hummingbird	59
23	California Thrasher	54.5
24	Western Bluebird	46.5
25	Hermit Thrush	41.5
26	Linnet	40.5
27	White-crowned Sparrow	36.5
28	Black-headed Grosbeak	35
29	Ruby-crowned Kinglet	34
30	Western Flycatcher	33.5
31	Audubon Warbler	31
32	House Wren	30.5
33	Golden-crowned Sparrow	29.5
34	Orange-crowned Warbler	27.5
35	Wood Pewee	27
36	Warbling Vireo	27
37	Violet-green Swallow	23
38	Downy Woodpecker	21
39	Ash-throated Flycatcher	21
40	Robin	19.5
41	Hutton Vireo	19.5
42	Mourning Dove	19
43	Western Meadowlark	19
44	Turkey Vulture	18
45	White-throated Swift	16
46	Cooper Hawk	15
47	Olive-sided Flycatcher	15
48	Varied Thrush	15
49	Sharp-shinned Hawk	14
50	Cassin Vireo	14
51	Yellow Warbler	14
52	Fox Sparrow	14
53	Ferruginous Rough-leg	12
54	Hairy Woodpecker	12
55	Purple Finch	12
56	Belted Kingfisher	11.5
57	Sparrow Hawk	11
58	Cliff Swallow	11
59	Golden Eagle	9.5
60	Cedar Waxwing	9.5
61	Lazuli Bunting	9.5
62	Allen Hummingbird	8.5
63	Bullock Oriole	8.5
64	Horned Lark	8
65	Pileolated Warbler	8
66	Great Horned Owl	7.5
67	Pine Siskin	7.5
68	Western Tanager	7.5
69	Red-breasted Sapsucker	6.5
70	Rough-winged Swallow	6.5
71	Russet-backed Thrush	6
72	Dipper	6
73	Say Phoebe	5
74	Crow	5
75	Western Gnatcatcher	5
76	Yellow-breasted Chat	5
77	Band-tailed Pigeon	4.5
78	Rock Wren	4.5
79	Prairie Falcon	4.5
80	Green Heron	3.5
81	Winter Wren	3.5
82	Lawrence Goldfinch	3.5
83	Golden-crowned Kinglet	3
84	Pipit	2
85	Loggerhead Shrike	2
86	Townsend Solitaire	2
87	Killdeer	1.5
88	Road-runner	1.5
89	Poor-will	1.5
90	Rufous Hummingbird	1.5
91	Brewer Blackbird	1.5
92	Lark Sparrow	1.5
93	Great Blue Heron	.7
94	Barn Owl	.7
95	Screech Owl	.7
96	Barn Swallow	.7
97	Slate-colored Junco	.7
98	Brown Creeper	.7
99	Pigmy Owl	.7
100	Pigmy Nuthatch	.7
101	White-tailed Kite	.7

When the species listed above are assigned to five classes of frequency (A, 1-20 per cent; B, 21-40 per cent; C, 41-60 per cent; D, 61-80 per cent; E, 81-100

per cent), the numbers of species in these classes are 62, 14, 7, 14, and 4, respectively, and these figures also represent the percentage of species in each group in the whole list recorded for the area. Thus the distribution of species among the classes of frequency is remarkably like that revealed in similar surveys of other localities. The only perceptible difference is in classes D and E. The small number of species in class E may result, we suspect, from the circumstance that the thick screen of the predominantly brushy habitat in Alum Rock Park hinders the detection of every species on each trip. Because the present use of the records was not anticipated, the observers may not have made special effort to record all the common species noted. Despite this possible lack in materials, the species appear generally to be arranged in the proper sequence, and the index numbers are useful aids in judging the place of each bird in the fauna.

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A JAY SHOOT IN CALIFORNIA

By MARY M. ERICKSON

The killing of vermin believed to be destructive to game is common practice among sportsmen, but the result of a campaign for this purpose has rarely been recorded. As an outgrowth of a request for information on the inter-relationships of jays and quail, Mr. E. T. Hooper and I were given the opportunity to witness a jay shoot held by the Associated Sportsmen of Calaveras County, California, on Sunday, April 26, 1936.

The sportsmen in this region are interested in upland game birds, particularly the California Quail, and they seek to maintain this species in sufficient numbers to make good hunting. Their reason for holding a jay shoot, reduced to its simplest terms, is that jays have been seen to kill young quail and are known to destroy eggs, and therefore, the argument goes, any decrease in the number of jays must benefit the quail. This opinion was not unanimous. Some hunters expected real benefit to the quail to result from the shoot; a few were skeptical, but they felt that the quail should be given the benefit of the doubt.

Jay shoots have been held in Calaveras County for many years. Two persons reported that hunts have taken place about once a year during the eleven and fourteen years they had lived in the vicinity. Two old-time residents said that occasional shoots had been held thirty or forty years previously. Recently, one or two shoots a year have been held, usually in the fall, sometimes in the spring, but the time of year and the number are irregular. The last shoot had been held on October 20, 1935, when, according to a local newspaper, 1368 jays were killed.

The shoots, at least in recent years, have been conducted as contests between two teams, and after the count there has been a dinner, or as this year, a barbecue in which wives and friends shared, at the expense of the losing side.

Previous to the 1936 shoot, two captains, one from San Andreas and one from Angels Camp, each selected a team from among the men planning to participate. Contrary to previous practice, the personnel of the teams this year was kept secret until the time of the count.

On the day of the shoot each participant was free to hunt when and where he liked until 4:30 p.m., when the count was to be started. As would be expected, certain enthusiasts started at daybreak and hunted until the time set for checking in. At