

denial of the first implication. The individual birds are not represented by complete seasonal records. Certain individuals, also, failed to gain when the averages showed a high peak for the whole population.

The records we have studied affect our evaluation of single weight readings. We now believe that each reading should have with it locality, date, time of day, and, if possible, sex. Records without this accompanying information appear to us to have less value than we thought at first; records with it we consider of more value than we did formerly. That is, it has been impressed upon us again that weight of a bird is not a static quality but is one of continuous and ordered change.

The amount of fluctuation exhibited by individuals is great. The daily change seems to be much smaller than the normal seasonal change. The daily change is, obviously, mainly the result of the normal intake and outgo of food. The seasonal changes are, we think, mainly the result of the internal changes in the birds' metabolic activities which accompany the rhythm of the breeding cycle, including migration. But there is also weight change which is sometimes great and which comes from external influences. Possibly the early winter peaks in weights of the two species we have considered resulted from external factors favorable to the foraging or the nutrition of these kinds of birds.

The material contained in this report along with that in the two papers already cited appears to show the nature of the variations which occur in body-weight in the Golden-crowned and Fox sparrows. How generally the trends pointed out apply also to other kinds of birds we cannot say. However, analyses of weight in the House Finch (*Carpodacus mexicanus*) by Partin (Condor, 35, 1933, pp. 60-63) and of the Chaffinch (*Fringilla coelebs*) by Groebbels (Der Vogel, 1, 1932, pp. 636-637), where they are comparable, exhibit remarkably close parallels with the records of the birds we have studied. Other species in a different family studied by Groebbels (*loc. cit.*) show an entirely different type of seasonal rhythm in weight change. Thus it appears that records must be obtained for many more species before general conclusions may be drawn concerning variations in bird weights.

**Summary.**—Winter weight records (numbering 1422) for 286 Golden-crowned Sparrows and half as many (711) for 91 Fox Sparrows trapped at Berkeley in 1932-1933 show that both species reached one peak in weight in mid-winter and another, considerably higher one just before the spring migration. Supplementary records from other sources show the validity of the spring increase and indicate that high weight is maintained until arrival on the breeding grounds. The records confirm previous determinations that, on the average, weight increases during the day. Seasonal deviations in weight seem to be greater than other kinds which affect a single bird.

*Museum of Vertebrate Zoology, Berkeley, California, January 19, 1934.*

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## FROM FIELD AND STUDY

**The Jay as a Benefactor of Man.**—While on an afternoon hike on August 26, 1933, I flushed several groups of California Jays (*Aphelocoma californica*) at different points along my route from where they had been feeding on the ground in an extensive field near Benicia, Solano County, California. There were probably not less than forty birds feeding in this manner, and I suspect, judging from the size of the different assemblies, that they were various family groups still associated together.

Jays are usually found in the brush or heavy tree growth and do not ordinarily congregate in the open fields. It appeared that they were attracted to the fields by the abundance of grasshoppers, and in order to verify this assumption I collected

one of the birds. The stomach was found to be packed so solidly with grasshoppers and black ground beetles that it seemed ready to burst open. With little doubt the majority of this congregation of jays had been feeding on these destructive insects.

Personally, I like the jay and think it should be given some measure of credit rather than continual censure. From the esthetic viewpoint, at least, it is one of our most lively and beautiful birds. I consider that we are fortunate in this vicinity in having a large jay population, due in large measure to the fact that there have been no organized jay shoots about Benicia, a practice which in my opinion should be discouraged.—EMERSON A. STONER, *Benicia, California, August 31, 1933.*

**Snowy Egret in a Mountain Forest.**—During the six weeks ending September 16, 1931, a Snowy Egret (*Egretta thula brewsteri*) was observed daily by Mr. and Mrs. John Dillwood at Buck Meadow on Deer Creek, Fresno County, California. The elevation of 7,000 feet and the forested environment in low Canadian Life Zone make this occurrence worthy of record. Starting from the San Joaquin Valley, the bird could easily fly up the Kings River, then Dinkey Creek and later to its tributary, Deer Creek.

This incursion of cold climate environment through altitudinal wandering is a counterpart of latitudinal wandering into Nova Scotia and British Columbia, which places the Snowy Egret in Canadian Life Zone faunas a thousand miles northward. My identification of Mr. and Mrs. Dillwood's long observed bird as the Snowy Egret is by their size comparisons with the Great Blue Heron and Anthony Green Heron (with both of which they are quite familiar), and the fact that it had a black bill. It is significant to note the disappearance of the bird on the day "deer hunting" began.—ROLAND CASE ROSS, *Los Angeles City Schools, September 15, 1933.*

**Nesting of the Red-breasted Nuthatch.**—On page 210 of the September-October (1933) issue of the Condor there appears this statement: "Mr. Brighton C. Cain, who a year ago banded young Red-breasted Nuthatches in a nest box at the Scout Camp at Diamond Canyon near Oakland, has found a pair of the birds this year nesting just outside of the camp in a hole made by Downy Woodpeckers in a dead pine."

This statement brought vividly to my mind the difference in habits in the same species of bird in different sections of its nesting range. Here in Yosemite Valley it has been my experience that the Red-breasted Nuthatches (*Sitta canadensis*) never occupy old nest-holes of any sort. Each year the birds of a pair working in turn excavate a new nest-hole. Often they dig two, or three, or possibly four prospect holes before finally deciding on the one that is to be the nest-hole of the season. Most often they choose to work in the dead wood of a living cottonwood. The second choice of tree is the Kellogg oak, but I have also watched a pair of birds drill a nest-hole in the dead stub of a yellow pine. In one case the same pine stub was used two different seasons, but instead of using the old nest-hole, which appeared perfectly good, the birds quite ignored it and drilled out a fresh hole.

I have seen nests of the Red-breasted Nuthatch as low as five feet above the ground and as high as forty feet from the ground. The average height of the nest-hole above the ground is probably close to fifteen feet. In the Yosemite Valley, Red-breasted Nuthatches usually start to drill their nest-holes before the middle of April. For example, a pair of nuthatches that I had under observation began drilling on April 13, both birds working. April 20 the birds indulged in the mating act. May 1, began lining the nest with feathers. May 12, female incubating. May 19, male bird puts a ring of pitch around the nest-hole. May 23, the young hatched, and on June 10 they left the nest. Five days were spent in the tree-tops, and on June 15 the young birds came down and took a bath. June 21 the nuthatches were last seen together as a family group.

When feeding small young the parent nuthatch dives on the wing directly into the nest-hole. When the young are old enough to come to the entrance of the nest-hole the old birds alight just below the entrance. When the young nuthatches leave the nest they are in full plumage and they are much more handsome than their parents because their feathers are neither frayed nor ruffled.—CHARLES W. MICHAEL, *Yosemite, California, September 17, 1933.*