

TRAPPING CEDAR WAXWINGS IN THE SAN JOAQUIN VALLEY, CALIFORNIA

WITH ONE ILLUSTRATION

By CHARLES H. FELTES

It has been my desire ever since my entry into the field of bird-banding in 1930 to band some species of bird in mass numbers, a species that would furnish numerous returns along its migratory route. With that in mind, my thoughts centered on various birds, but on account of my regular work it was impossible to devote the time required for trapping.

Gambel Sparrows furnished the bulk of my captures each year, but returns were not encouraging. Then came the spring of 1932 and, as has been noted in the past few years, the Cedar Waxwings (*Bombycilla cedrorum*) were on hand to foray through the town of Modesto, California, and surrounding country to feed on toyon, black haw, mistletoe, and numerous other berry-producing plants and bushes. Many times I observed them sitting like sentinels in the tops or among the branches of trees, an occasional "hiss" emanating from here and there among them, gradually increasing in volume until as if from a given signal there was a sudden dash to the berry bush, then a hissing, seething mass of birds.

It was while watching one of these performances that the idea occurred to me that it might be possible to trap them by using the same kind of berries they were eating. I had some toyon bushes in my yard but the birds had not as yet located them. So gathering some of the berries a "set" was made with a series of two- and four-celled Potter traps in the yard of a friend some four blocks distant. Shortly after the noon hour the birds made a dash down to the traps to secure whatever berries they could. After they retreated to the trees there were some twenty-odd birds trapped. These were gathered, the traps re-set, and the birds were then banded and released. During the afternoon a few more were taken and at the end of the day 26 Cedar and 6 Bohemian (*Bombycilla garrula*) waxwings had been banded. No more were taken this season.

For some reason the next year (1933) I drew a blank, although several special sets were made. The berry bushes in my yard went to the "cleaners" after a ten minute attack by a good-sized flock. Not even a berry was left for my pet Western Mockingbird which made my yard its rendezvous. Those voracious gluttons had done a thorough job. A decision was made after a survey of the "robbery". Next year I would be prepared, and so I was. Early in the spring of 1934, the middle of January to be more exact, a cover was made for each of the toyon bushes out of one-inch mesh wire netting. It was so effective that pet mocker was cheated out of its regular bill of fare except what it could get through the wire or for those berries that had fallen to the ground.

Then about the middle of February the Cedar Waxwings made their first attack. Their presence in the vicinity had previously been noted and my traps had been baited and set for many days. The mockingbird would dash at one and then at the flock, chase them from one tree to the other, and finally they would fly away only to reappear when they thought the mocker was not on duty. On one occasion the mocker actually flew against one of the waxwings and knocked it from the limb, the latter recovering itself when just about half way to the ground. At times it seemed so exhausted that it would be only a matter of time before they would overwhelm it; but at each return it was back at them.

This warfare continued for about a week, and seeing that I was getting nowhere with my trapping I decided to trap my mocker and take him for a ride. This was

finally accomplished after all bait was taken away from the traps except a small amount inside each one. A band was placed on it as it was released about four miles from town. It never has returned to my yard. This seemed to be exactly what was necessary to get the waxwings to the traps; for the next day, February 25, 161 birds were trapped and banded. Two days later 12 more were taken and the next morning 64 were in the traps. On account of my regular work I was unable

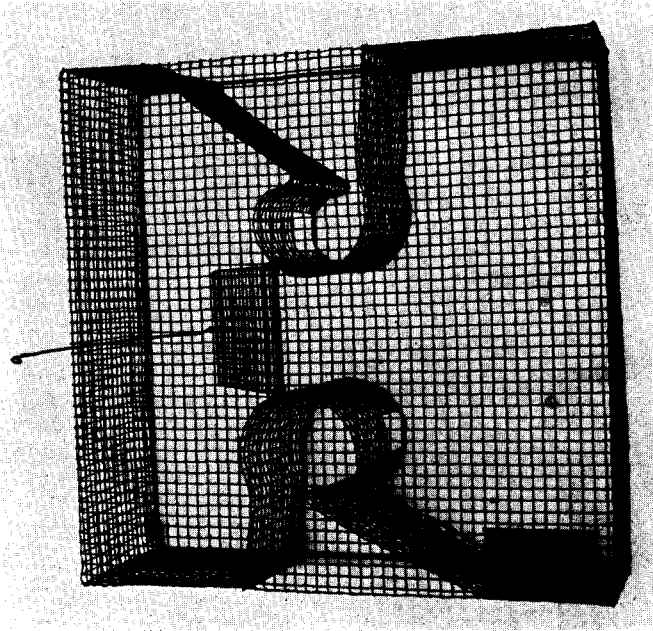


Fig. 5. Trap is hanging on side of building and you are looking at it just the same as if the camera were directly over and a little to the right of it and the trap were on the ground. This is the "Modesto" trap spoken of in this article, with the new baffle plate attached and about half way open. The wire rod protruding through the trap is used to pull the plate up flat against the top and folds down flush across the top, out of the way.

to trap further, so the season closed with a total of 237. I felt somewhat elated I must admit, for it never occurred to me that it would be possible to take so many birds of this species in such a short time. There were a few repeats (3) and no Bohemians showed up in the flock.

A new trap invented the previous year by Mr. Irl Rogers and myself was responsible for so large a catch; 31, 23, and 17 birds have been taken at a single catch in one trap. Since then as high as 39 were taken at one gathering and 20 to 25 were common captures. The trap is 24 inches square and 8 inches high, having an entrance funnel on two sides. (See fig. 5.)

With the arrival of the 1935 season, Cedar Waxwings again put in their appearance. They were first observed in the fall of 1934 on October 3, when a small flock of 12 birds was noted. On the 17th of the same month 45 birds were observed. From then on they became common; small flocks were seen in nearly every part of town during the remainder of the year. On January 2, 1935, 75 birds were observed. They seemed to become more numerous as spring approached and early in February (about the 10th) my co-worker, Mr. Rogers, reported seeing many

hundreds of them in the raisin warehouse district in the southeast part of Modesto, 90 miles southeast of San Francisco. As he was somewhat excited about it I made an early investigation and found his statement to be correct. We estimated the flock to contain 1000 to 1500 birds. We were conservative I am sure, for since then we have estimated other flocks with greater accuracy and found they contained more birds than we usually estimated.

On February 14, I asked for and received permission from the manager of a local raisin dehydrating and packing plant to do some trapping on the flat roof of one of the storage sheds. The birds were very numerous here as the sides of the shed were open and the birds would fly in under the roof and help themselves to the raisins stored in the boxes underneath. Their depredations were of a serious nature, as many of the boxes along the outside rows had been levied against by them for at least one-fourth of the original contents. After the attention of the manager was called to it, the boxes were covered with trays to keep the birds out. This arrangement worked satisfactorily.

Securing a ladder from the plant that afternoon, with which to get on and off the roof, a set was made with Modesto, Potter, and some newly designed warbler traps. They were in place and baited by 2:30. At 5 p. m., when the last bird was released, a check showed 111 had been banded. From then on, they were trapped in large quantities until toward the end of the season, banding being discontinued after May 13 when approximately only 200 birds were seen. The next day, May 14, but 14 were observed and the last ones (about 5) on May 19. The following table will show the total captures each day which include new birds, repeats, and returns. It also shows the number banded each hour (average).

Date 1935	Hours per day	Number birds trapped	Average per hour*	Number banded	Number of repeats	Per cent new bands	Per cent repeats	Returns
Feb. 14	2½	111	44	111	0	100.0	0.0	0
Feb. 15	6	342	51	330	11	96.4	3.6	1
Feb. 17	8	355	44	330	24	92.9	7.1	1
Feb. 19	8	412	52	343	69	83.4	16.6	0
Feb. 24	8	403	50	325	77	80.6	19.4	1
Mar. 4	8	200	25	169	31	84.5	15.5	0
Mar. 5	8½	262	31	173	89	66.0	34.0	0
Mar. 6	7	156	22	114	42	73.0	27.0	0
Mar. 8	8	270	34	190	80	70.3	29.7	0
Mar. 9	½	14	28	4	10	28.5	71.5	0
Mar. 10	8	462	58	284	178	61.4	38.6	0
Mar. 16	8	322	40	236	86	73.2	26.8	0
Mar. 17	5	83	17	56	27	67.4	32.6	0
Mar. 19	1	11	11	3	8	27.0	73.0	0
Mar. 23	1½	100	67	68	32	68.0	32.0	0
Mar. 24	4	214	54	122	91	57.0	43.0	1
Mar. 26	4½	239	53	147	92	61.5	38.5	0
Mar. 27	8	156	20	86	70	55.1	44.9	0
Mar. 30	1½	61	41	34	27	56.4	43.6	0
Mar. 31	8	239	30	88	151	36.8	63.2	0
Apr. 2	10	333	33	132	200	39.7	60.3	1
Apr. 8	8	295	37	164	130	55.7	44.3	1
Apr. 13	5	217	43	129	88	59.4	40.6	0
Apr. 14	6½	343	53	98	244	28.6	71.4	1
May 6	2	48	24	36	12	75.0	25.0	0
May 9	4	206	52	157	49	71.3	28.7	0
May 10	7	50	7	30	20	60.0	40.0	0
May 12	4	51	13	35	16	68.6	31.4	0
May 13	1½	27	18	16	11	59.5	40.5	0
Totals	162¾	5982	36	4010	1965	7

*Birds per hour figured to the nearest whole number.

Thirty-two days and parts of days were spent in trapping, on three of which no captures were made, leaving twenty-nine days of actual banding operations, consuming $162\frac{3}{4}$ hours; 4010 new birds were taken, an average of 206 per day; 1965 repeated, nearly 50 per cent. The greatest number banded in a single day was 343, the smallest, 3; the greatest number trapped (new and repeats), 462. Seven returns were taken, five of them being birds I banded in the spring of 1934.

The other two were "foreign" or "private" bands, the identity of which I have been unable to ascertain. One bore the number "35" and the other "27". These bands were of identical make, the numerals being italicized on a very hard thin metal that had the feel and appearance of nickel silver. There was no inscription or other mark inside or out by which an identification could be traced. In an attempt to trace them, five northern newspapers in California, Oregon, and Washington were contacted to carry a news article about the bands, but no results were obtained. In answer to an inquiry, word was received from H. F. Witherby of London, England, in charge of banding in that country, "that the bands were not from there." He also stated, "that his and all of the recognized marking institutions of Europe have definite name and address for the return of recoveries." It seems reasonable to assume, then, that these are "private" bands placed on birds, either held in captivity from which they escaped or were freed, with the expectation that they might again be checked back in the locality in which they were banded. Whatever the case, it is hoped that some reader of this article may furnish the information necessary to make the identification and forward it to me.

Raisins were used for bait, the dehydrated (artificially dried and bleached) being much preferred by the birds to those dried in the sun. The amount used was approximately 300 pounds. These attracted several other birds to the traps, which included the Western Mockingbird (*Mimus polyglottos leucopterus*), Western Bluebird (*Sialia mexicana occidentalis*), Audubon Warbler (*Dendroica auduboni*), California Linnet (*Carpodacus mexicanus frontalis*), and Gambel Sparrow (*Zonotrichia leucophrys gambelii*).

No casualties were suffered in any of the traps. A few waxwings were slightly hurt in handling, possibly two or three to the extent that they succumbed. A great many were taken, though, that showed they had had a hectic career, the most outstanding being one with the front half of the upper mandible and all toes on the left foot except the hind one shot away. The right leg had also been broken. Another had suffered a somewhat similar fate by losing half of the upper and one-fourth of the lower mandible. Other accidents showed lost, broken, and twisted legs, lost toes and broken wings, an eye out, and other minor injuries.

A partial albino Cedar Waxwing was taken on May 9. The brown of the head was a much softer shade than on the average bird. The first, second, and third primaries and secondaries of the right wing were pure white, the fourth primary about half white. Left wing normal. The middle toenail of the right foot and the right, middle, and hind toenails of the left foot were flesh color, all others being black. The rest of the bird was normal.

An experiment that developed into a custom was to leave two or three birds in each Modesto trap to act as decoys. This proved highly successful from the start and the entire flock was readily attracted in this manner. Immediately, when part of a flock decoyed in, practically all other waxwings within sight of them in the vicinity followed. Flocks of from 2500 to 3000 have decoyed in this manner, not once, but time after time.

Weather conditions best suited to trapping seemed to be on dull and cloudy days

or immediately following a storm. On clear warm days the birds became wary, broke up into small flocks and roamed over a greater area of the town and adjacent country, but usually re-assembled in one big flock in the raisin district in mid-afternoon. The birds were very unafraid and hungry during the early spring and on several occasions alighted on the storage cage within a foot of my hand to grab a raisin or two that was lying there; then as the weather got warmer they became more shy. On very cold or wet days it was common to see the flock crowded and huddled in all of the available space between and around the big electric transformers on the power poles and in the sub-station near by, taking advantage of the warmth created by the electricity. Several pictures were taken of them in these locations.

On one occasion a banded bird was gently laid on its back about two feet distant and remained in that position approximately 15 minutes while the banding continued and released birds flew off directly over it. Natural conversation was carried on during this period before the bird took flight. A later experiment was carried out by placing another bird in a like position where it remained for a little over half an hour. Ordinary conversation was carried on by four persons, traps and storage cages were passed back and forth over the bird, other birds flew over it, I got up and walked around it carrying storage cages that were bumping together—and yet it did not fly. Gathering the cages to make another collection of birds from the traps, I had gotten about 75 feet away when a switch engine came rumbling down the track about 60 feet from the bird, and this scared it into sudden flight.

Returns on the Cedar Waxwings banded to date are interesting and form a skeleton of their migratory route that may be filled in during the cycle of this coming season's migration. Redlands (San Bernardino County), California, is the southernmost point of recovery to date, and Olympia, Washington, the northernmost. Returns to date are listed as follows:

Band no.	Date banded	Recovered at	Recovery date	Nature of return
F-131863	2-25-34	Modesto, Calif.....	4- 8-35	Trapped, released
F-131865	2-25-34	Mendota, Calif.....	3- 1-35	Shot in raisin yard
F-131898	2-25-34	Modesto, Calif.....	3-24-35	Trapped, released
34-111228	2-25-34	Modesto, Calif.....	3- 6-34	Found dead
34-111261	2-25-34	Modesto, Calif.....	2-24-35	Trapped, released
34-111284	2-25-34	Modesto, Calif.....	2-17-35	Trapped, released
34-111293	2-25-34	Olympia, Wash.....	7-11-34	Found dead
34-111314	2-25-34	Ceres, Calif.....	4- 3-34	Choked to death
34-111328	2-27-34	Modesto, Calif.....	2-15-35	Trapped, released
34-111334	2-27-34	Roseburg, Ore.....	5-29-34	Killed
34-111393	2-28-34	Redlands, Calif.....	1-13-35	Found injured, died
34-170315	2-14-35	3 miles SE Modesto.....	3-31-35	Found dead
34-170480	2-15-35	Modesto, Calif.....	5- 2-35	Found dead
34-170509	2-15-35	Modesto, Calif.....	3-21-35	Found dead
34-170586	2-15-35	Modesto, Calif.....	3-21-35	Found dead
34-170614	2-15-35	Modesto, Calif.....	2-16-35	Killed by auto
34-170663	2-15-35	Gilroy, Calif.....	5-20-35	Shot in cherry orchard
34-179007	2-17-35	Auburn, Calif.....	5- 6-35	Shot in cherry orchard
34-179198	2-17-35	Fresno, Calif.....	2-23-35	Shot in raisin yard
34-179219	2-17-35	Fresno, Calif.....	2-23-35	Shot in raisin yard
34-179659	2-19-35	Sacramento, Calif.....	4- 7-35	Found dead
34-179870	2-24-35	Modesto, Calif.....	3- 1-35	Found dead
34-179942	2-24-35	Near Modesto, Calif.....	3-10-35	Shot
34-179944	2-24-35	Modesto, Calif.....	3-20-35	Electrocuted
35-105071	3-16-35	Yankee Hill, Calif.....	6- 3-35	Shot in mulberry tree
35-105315	3-24-35	Modesto, Calif.....	5-20-35	Found dead
35-105481	3-26-35	Modesto, Calif.....	5-11-35	Found dead
35-105979	4- 8-35	Stockton, Calif.....	5- 1-35	Found dead
35-108123	4-13-35	Dinuba, Calif.....	4-21-35	Shot by boy

Added to this list are 191 birds that were shot by one individual over a period of ten days in his cherry orchard one-half mile from the banding station. These are total returns on all Cedar Waxwings banded (4274) in 1932, 1934, and up to and including May 13, 1935, a recovery percentage of 5.17.

Reports received by me last spring from various parts of the state indicate that

the migration was general. Persons in the Los Angeles and Fresno districts reported great numbers, and Walter Powell, acting ranger-naturalist of Sequoia Park, stated the birds were observed near "Sunset Rock" (6400 feet) within the Park. B. L. Fredrickson, game warden at Gilroy, reported a flock of five to six hundred in a cherry orchard at that place and C. I. Holmes, of Auburn, stated that flocks of forty and fifty were observed in cherry orchards in that district.

It is to be regretted that complete records were not kept on arrival and departure during the past five years, the only complete one being that of 1934-35, when the last one was seen on May 19. The records show time of appearance in the fall and are as follows:

Year	First seen
1931	October 10
1932	October 30
1933	October 2
1934	October 12

On April 13 two indications of breeding were noted in a large flock that occupied the electric wires along side the trapping station. This consisted of two birds edging to and from each other along the wire for a period of two or three minutes. Then when finally they came close together the female allowed the male to contact it and perform the mating act which lasted but a few seconds. Just a month from this date my last bird was banded and but 200 were seen in the vicinity. One week later there was none.

Modesto, California, August 18, 1935.

THE FAMILY RELATIONS OF THE PLAIN TITMOUSE

By JOHN B. PRICE

The family relations of birds furnish some of the most interesting problems of ornithology. Many questions arise in this connection and among them are the following:

1. Do birds nest in the same territory year after year?
2. Do birds keep the same mates from year to year?
3. Is there any difference between the sexes in their habits of retention of a nesting territory?
4. Do young birds stay in the same locality where hatched and nest there the following year?

This problem has been investigated for the House Wren (*Troglodytes aëdon*), a migratory bird, by S. Prentiss Baldwin (*Auk*, 38, 1921, p. 237) who finds that this wren does not keep the same mate but that "divorce" is the rule. The Plain Titmouse (*Baeolophus inornatus*) is similar to the house wren in readily nesting in bird houses or nesting boxes but differs from that bird in one important matter. The House Wren is migratory while at Stanford University, California, the Plain Titmouse is resident the entire year, usually raises only one brood a season, and is usually seen in pairs.

The writer started this study in 1928. At that time colored celluloid bands were not in use, so he used only the government aluminum bands. This of course made the securing of results more difficult as it necessitated the capturing of the birds each year for identification and this was not always possible. The birds were captured in the nest-boxes, each box having a removable top and a shutter that closed the entrance when a person at a distance pulled an attached string.