

Mr. and Mrs. A. G. Barr, of South Pasadena, California, report 38 Cedar Waxwings banded, all caught with a drop trap over water.

At Wright M. Pierce's station in Claremont, California, we suspect that water has been responsible for a good list of California Purple Finches and Cedar Waxwings, although he also keeps in a corner of each trap all sorts of things from the kitchen, such as fruits, tomato, lettuce, meat, and bread, as well as seeds and raisins. Quite likely the immediate presence of deciduous trees is a factor influencing the presence of the Purple Finches and Waxwings.

So far as I know the first water trap in the West was used at the station of Mrs. G. Maurice Crow, at Glendora, California, where a trap set over a watering trough immediately proved irresistible to Audubon Warblers and Hermit Thrushes.

Mr. Johnson A. Neff, at Corvallis, Oregon, banded 148 juncos in the last three months of 1924. He reports the Shufeldt Junco outnumbering the Oregon Junco about 25 to 1, using specimens identified by Dr. H. C. Oberholser for comparison. Next in importance were 33 Song Sparrows (not differentiated from the Rusty, if different) and 17 California Purple Finches.

**Emergency Supply of Bands.**—Owing to the time required for a return communication from Washington, an emergency supply of bands has been deposited in the West. Banders should continue to order their supplies of bands from Washington in advance of their needs; but when, as may well happen, a wave of birds suddenly exhausts the bands on hand, enough will be sent from the emergency supply to carry over until those ordered from the east can arrive. Address such emergency requests to J. Eugene Law, Altadena, California, stating probable needs till new supply comes.

**Symposiums.**—Responses with data asked for under "Symposiums" (CONDOR, vol. 26, 1924, p. 232) were disappointingly few. Some particularly good data, however, were received and all of it is being carefully tabulated and preserved and will be published when the quantity warrants. Obviously, to trace great annual waves, such as occur in the migration of the Golden-crowned and Gambel and Nuttall sparrows, a quantity of confirmatory data is necessary. In this, every one can help, whether a bander or not; but of course without the bands only the pace of the van and rear guards can be traced, with no certainty that these are not "leap-frogging". Advice of any definite impressions giving the date when these forms are last seen this spring will be appreciated.

**Analyses of Banding Records.**—As banding work progresses, special interest attaches to simple displays which will give the operator a comprehensive idea of what is going on at his own station. The mere list of birds banded and of repeats taken assumes intensive value when arranged in tabulations which reveal seasonal changes in local population. Each style of tabulation or graph seems to present some different aspect for consideration, not brought out in the others. Obviously, every bird banded and every repeat recorded adds to the value of such analyses.

Methods for analyzing banding data are developing rapidly. This column will welcome brief descriptions of any new ideas that are developed. Some already in use in the Southwest are here presented.

1. **Calendared graphs.** Many are using a "quadrille" ruled sheet, large enough to provide a vertical column of squares for each day of the period under study. Mr. Harold Michener brought to notice such sheets, 11 x 16½ inches, used in business analyses, which provide a column for each day in the year with the dates printed across the top, and which have the horizontal ruling in 5- and 10-line groups. These sheets are sold under the Codex trade name "One year by days."

Allowing 5 lines to a bird (=band no.), 5 years are provided for. In the proper squares the dates of appearance of the banded bird are recorded by half circles or half squares for nestlings, hollow circles or squares for immatures, and solid circles or squares for adults. A tiny point at the upper right corner for ♂ and at the lower left for ♀ amplifies the record. Only individuals of one species are entered on a sheet.

Mr. and Mrs. Harlan H. Edwards use a similar form slightly more condensed, known to the trade as "Lefax no. 108." Mr. Edwards suggests that a second 5-year period can be superimposed on the first by the use of a different colored ink, when a bird persists that long.

By such method, one gets a graphic visualization of his work with any species. In my own case, I find the graph improved by connecting with a ruled line the symbols representing in horizontal series the repeated appearance of the individual.

2. Trap days. The above record demands a companion record which gives the days when the traps were in operation. Blank bird days are misleading unless neutralized by blank trap days. The same calendared graph is being used for this purpose, 10 horizontal lines for a year. Thus, in the vertical column of 10 squares which represent a day, one can darken a portion to correspond with the portion of the day when the traps were working. This record looks somewhat like the conventional rain-fall chart.

3. Tabulation by seasons. Using a page for a species, one may tabulate his birds banded in a season down the middle of a wide vertical column, entering to the left of the band number the date the bird first appeared and to the right the date it last appeared. In successive columns to the right of this first column the same thing may be done for subsequent seasons, keeping all the records for any one individual on a single line. Thus each band number appears only once in a season. The record can be continued endlessly from page to page, since the left or first column automatically discontinues itself at the end of the season, allowing the next column to be shifted to first place on the next page. See table 3.

*Zonotrichia coronata*  
51

Winter 1921-1922			Winter 1922-1923			Winter	
Feb. 2	6645	Mar. 11	Dec. 5	6645	Apr. 25	Oct. 31	66
Mar. 10	24801	Apr. 4	Dec. 4	24801	Feb. 1		
Apr. 23	24828	Apr. 23	Dec. 4	24828	May 1	Oct. 27	248
Apr. 29	24829	Apr. 29					
			Oct. 20	12382	Apr. 27	Oct. 28	123
			Nov. 19	12383	May 12	Oct. 25	123
			Nov. 20	12384	Feb. 4		
						Nov. 1	4114

Table 3. UPPER LEFT CORNER OF A FORM FOR A TABLE OF THE INDIVIDUALS OF A SPECIES WHICH RETURN YEAR AFTER YEAR, WITH THE DATE OF ARRIVAL AND DEPARTURE EACH YEAR.

4. Tabulation by weeks. The ideal tabulation would be a daily record of the kind here to be described. One who can devote much of his time to this work should keep such a one. But a weekly summary yields definite impressions of bird movements and population. Always, a species to a sheet. Vertical columns represent 7-day periods throughout the season. Band numbers, best arranged serially for their first entry, are entered once in each column when the bird appeared during the week which that column represents. All the entries for the same bird are made on the same horizontal line. Thus one may discover that his entire population of an earlier period is replaced by a later population of the same species. But this record is one-sided without a record of the dates in each week on which the traps were open for business. A line immediately under the week heading is used for this purpose. See table 4.

5. Year's summary by months. Use a quadrille ruling with 1/4- or 3/8-inch squares. Enter along the left margin a list of the species banded, allowing 3 lines to a species. Use 3 columns for a month, one for birds banded, one for repeats and one for returns. A return becomes a repeat after its first month, of course, and a repeat is not included as such until the month following its first capture. Reserve 3 columns along the right margin, and one line at the bottom for totals. The total number of birds of a species banded during the month is entered in the upper left square reserved for that species, the number of *individuals* which repeated (not the total number of repeats) is entered

*Zonotrichia coronata*  
W3

1923 October			November				December		
	21-27	28-3	4-10	11-17	18-24	25-1	2-8	9-15	16-22
Trap days	21,22,23 24,25,26,27	28,29,30 31,1,2	4		18			12	
im.	41140	41140	41140					41140	
im.		41142							
ad. ♀		41143							
ad. ♂		41144							
ad. ♂		41145	41145						
ad. ♂			41146						
im.					41147				
im.								41148	
ad. ♂									

Table 4. UPPER LEFT CORNER OF A FORM FOR A TABLE OF THE INDIVIDUALS WHICH COMPRISE THE LOCAL POPULATION FROM WEEK TO WEEK.

in the middle square on the second line, and the number of individuals which returned to the station during the month are entered in the lower right square. Thus, one's footings horizontally give the totals for each species, while the footings vertically are the total individuals of all species. Obviously, the horizontal total of repeats is meaningless and should be ignored, but all the other totals both ways have direct significance with regard to the local population. See table 5.

1924 Las Leyes Station Altadena Calif.	January			Febru		Totals			
	Banded	Repeats	Returns	Banded	Repea	Returns	Banded	Repeats	Returns
<i>Zonotrichia coronata</i>	1			3			212		
		7						—	
			0						20
<i>Zonotrichia leucophrys gambeli</i>	3								
		1							
Totals	6	17	0	6	16		745		40

Table 5. FRAGMENTS FROM THE 1924 SUMMARY FOR ONE CALIFORNIA STATION, TO SHOW METHOD OF TABULATION.

One should bear in mind that in all such tabulations by periods an individual must only be counted once for each period unit, regardless of the number of times it may have appeared during such period unit. To illustrate: If 15 were entered in the repeat column for January because band no. 1234 had repeated 6 times and band no. 1236 9 times, when no others had repeated, the record would be useless. If, on the other hand, one's entry of repeats for January in this case were 2, his record would be truly a census tally for the month.—J. EUGENE LAW, *Altadena, California, January 29, 1925.*