All of the birds showed evidence of frost-bite. The tips of the toes, particularly the middle one seemed to be most susceptible. Mild cases resulted in a swelling of the tips of the toes at the base of the nail. Severe cases resulted in the complete loss of the toe. At first the toe appeared black and shrunken and subsequently dropped off.

Baltimore Oriole #62-116198 is unquestionably the champion of the lot, having survived a total of twenty-one days when temperatures ranged from below 0° - 20° and an additional forty-one days when temperatures were between 20° and 30°. This bird spent the entire winter out-of-doors except for the three-day period mentioned earlier.

There has been an astonishing increase in the number of wintering orioles in recent years. A survey of Audubon Field Notes Vol 17 (2) April 1963 shows no less than 116 records for Baltimore Orioles in 31 Christmas Counts in the East from New Brunswick to Florida. Twelve additional birds do not show in the Counts: 7 Nantucket ones being held captive at the time of our Count and 5 survived the month of January in Lexington, Mass. (Mass. Audubon Newsletter, Vol 2 (7) March 1963). This increase in the number of records suggests an interesting problem. Three possible theories present themselves:

1. This species may actually be undergoing an evolutionary change which would tend to shorten the migratory range.

2. There may be a weakness of the migratory instinct in certain individuals (all our observations have been of immature birds) which increased observation has brought to light.

3. It may be just an interruption in the normal migration pattern due to weather conditions and/or related factors.

Whether it is wise to winter-over an insectivorous bird such as the Baltimore Oriole is questionable. I do know that it is a full-time job and an expensive one.

3 Stone Alley, Nantucket, Massachusetts.

PLANNING AND CARRYING OUT PROJECTS AS A BANDER

By E. Alexander Bergstrom

(Reprinted from the Workshop Manual, Vol. 2, 1963)

When we plan a project for our banding station, we are really stepping back to take a good look at the reasons why we are banders. The reasons do vary, but generally they go beyond enjoyment of fresh air or pleasure in the bird in the hand. To a greater or lesser degree, each of us is penetrating beyond the limits of current knowledge, and experiencing the exhiliration of walking along new paths.

Banding is a means, not an end. Its essence is the identification of the individual bird, and the myriad ways in which that information can be used to tell us more about the species. Techniques are essential, and their improvement contributes greatly to the efficiency of our work, but they are not the major goal.

What we aim at defies any simple rule of thumb. One choice is between independent work and contributing to some extensive project. The result may be expressed in raw data, or in a polished report which is a major contribution in itself. If the bander drifts along without focussing his attention on one problem or area, he may accomplish relatively little; many of the most fruitful projects were carefully designed in advance. Let us not, however, be blind to the value of serendipity -- the ability to capitalize on new ideas or concepts that are suggested by the work as it progresses, not visualized from the start. A classic example is the discovery of penicillin -- arising from alertness to an unexpected phenomenon in the course of other work. The final test is the results; no one can tell you in advance just how great a result you may produce. James Lee Peters -- one of the great museum ornithologists of his generation but also an active bander -- once commented to me that he would never have imagined in advance the epochal results produced from Mrs. Margaret Morse Nice's backyard studies of the Song Sparrow.

HOW DO YOU START?

How do you start? First, be familiar with the published material on the species or problem that interests you. Time and again, years of work produce only limited results, for lack of familiarity with other work in the field. One productive approach is to concentrate on species which are being studied extensively, in formal or informal cooperative projects, and which produce relatively high recovery rates -- for example, blackbirds or "winter finches", or Operation Recovery. On individual projects, what gaps in our present knowledge can you detect from material published on that species, or on similar species?

It is generally wise to build upon your own background. Some general background is desirable, such as standard texts on ornithology, and the new Handbook; the banding manual will try to help. The formal training of banders varies tremendously, as does their physical ability -- as in climbing trees. For some projects, specialized techniques such as the preparation of microscope slides help. Some projects, such as advanced studies of plumage or behavior, are best carried out by those with quite a bit of specialized experience. A few projects require assistants or heavy equipment -- but you don't start that way.

The project should have some relation to the time you have available, so as to yield results within a few months or years. The Austins' study of the onset of old age in the Common Tern (increase in mortality rate) was one result of a full generation of work, with hundreds of thousands

of birds banded. If the project requires a large sample, you may never handle that many birds. If you are studying longevity, the number of years needed for meaningful results will vary somewhat with the species. If your free time is concentrated in one season, such as midsummer, pick a topic you can work on then.

The project should consider the species available. In general, it is best to pick one you can capture regularly and in numbers -- the "common" bird"is usually the useful one in this sense. Can you capture the bird both as young and adult, or will you be dependent on reports of birds shot or picked up dead? What constitutes adequate numbers varies with the species, and is to some extent a matter of opinion. Extremes include the Common Terns banded by the Austins on one hand, and on the other hand the penguins banded by Richdale in New Zealand, where some 200 individuals were followed intensively for ten years or more.

Another question is whether the species is "interesting" to you. This is not at all the same thing as asking whether you think its plumage handsome or enjoy its song. To me, one of the most "interesting" species now is the Starling, in which some birds appear quite sedentary and others seem to be following an ancestral, western-European NE-SW migration direction. Another is the Brown-headed Cowbird, which has expanded its breeding range markedly both northward and southward. The percentage of birds recovered elsewhere is one consideration. In one recent weekend in which I banded over 300 Evening Grosbeaks, Purple Finches or American Goldfinches, I took 8 or 10 birds banded elsewhere. If you are interested in long-term intensive studies, it's generally best to pick a species which is either a permanent resident or a seasonal resident; some years I have had 40 percent returns on Common Grackles banded the summer before. Contrast these with species like the Blackpoll Warbler, where at one time 4200 had been banded at various stations without a single return or recovery. One further test is whether you have an unusual opportunity; a station with regular visits by a species not often banded or studied. A hundred Pinyon Jays banded now will probably tell us much more than another hundred Blue Jays.

USING THE RESULTS If your project has been well thought out, preparing something for publication is not unduly hard. Decide whether to wait and handle it all at once like a PhD. thesis, or to deal with individual parts or progress in a series of papers or notes. If you need help, ask a more experienced bander, or the editor of one of the banding publications. Good raw data can still be published, even though it may be more productive to work up the material by comparison to earlier work on the species. Above all, don't assume that there's nothing new to publish; get your data together and see what nuggets or mother lode it contains.