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Instructions for Collecting and Preserving Birds and Eggs.

BY PROF. J. A. SINGLEY, GIDDINGS, TEXAS.

PART FIRST.

BRIEF INSTRUCTIONS FOR COLLECTING AND PRESERVING BIRDS' EGGS.

As many of the eggs sent me are poorly prepared and as this magazine may fall into the hands of some who are commencing a collection, I will give a few brief instructions as to the right way of preparing specimens. An experience of ten years (seven of them as a professional collector) will, I think, convince my readers that I am qualified to give instructions.

A few remarks as to the tools required, which can be bought from any dealer in Naturalists' supplies. Drills are the first requisite, and several sizes will be needed, from 2-32 of an inch for all fresh eggs, up to 1-4 inch for eggs in which incubation is advanced. Larger drills can be had; but who wants an egg with a half-inch hole in it? There are two kinds of drills, the so-called "fine-cut" drill, made to sell, and a toothed or burr drill, made for work. I have all the different makes and sizes of drills; but use altogether the 2-32, 4-32, 6-32 and 8-32 sizes of toothed drills. They last a long time; do not crack the egg and work fast.

Next after drills, the most necessary thing is a blow-pipe; different styles and sizes of these are also to be had, from the fine nickel ones with attachment to the common brass ones, straight or curved. Any

of these will do, provided you do not insert the point of the pipe into the hole in the egg. The curved blow pipe is the most convenient. Glass ones are not to be thought of, from their liability to break. I have used a curved brass blow-pipe, six inches in length, for several years and it is still as good as new. The original cost, was, I think, 20 cts. and I've prepared about 1500 eggs with it. Other articles that are needed are an embryo hook and a small pair of scissors. With such an outfit, anyone can prepare eggs (the tools necessary for preserving birds will be given further on.)

Various ways are recommended for draining or drying the eggs after blowing, such as laying them, hole downward, on a bed of sand, cotton batting, blotting paper, etc. I'll tell you of the "dryer" that I use and how to make it. Take a piece of card-board of suitable size, (mine is 12-18 inches) draw lines across, lengthwise, 1-2 an inch apart: now draw another set of lines, the same distance apart and at right angles to the first lines. Where the lines intersect punch holes with a .32 calibre wad-cutter. Mount this perforated card-board on a wooden frame, stretching it tight, (a few strips of wood nailed to the frame under the card-board will keep it from sagging) tack sides to the frame, projecting about two inches above the card-board bottom, all round, and you have what appears to be a shallow box with a perforated bottom. The eggs are placed in this form, hole downward; and as the hole in the egg is thus placed in the hole that has been punched in the card-board, a free circulation of air is insured, all around and in the egg, drying it in the shortest time; and there will be no cotton, sand or anything else, sticking around the edges of the hole.

Having indicated the tools necessary, a few hints about the field-work part of collecting comes next; and here I wish to warn the young collector against being of a too greedy disposition and "bagging" everything he finds. Of many species he will find hundreds of eggs, (that is in a region where bird-life is plenty) and in cases of this kind he can take for his own collection as many eggs as desirable to show the variations, and a few for exchange. He can always have his choice here and take only fresh eggs, letting the others alone. I condemn the practice of taking only half the eggs in a nest and leaving the rest. Nine times out of ten the bird will desert the nest. Better take all out of one nest and pass the next one. The bird that has been despoiled of its eggs will go elsewhere and build again.

Identification and authentication are the cardinal requisites in collecting. A bird or a shell bears its own label; but the science of Oology has not advanced to that stage where a species can be determined from the egg alone. Never take an egg until you are sure what species it belongs to. An unidentified egg is worse than worthless: it is of no use to the owner, and it is that much bird-life needlessly destroyed. If you find a nest and don't know the bird, secure it, either by snaring or shooting and make a skin of it. Place the same number on the eggs and bird and they can then be identified at any time. Directions for making bird-skins will be given further on.

Supposing the collector starting out for a day's collecting: he will need a box filled with cotton, (a cigar box is excellent) a note-book and pencil (climbers such as are used by "telegraph men" also come in handy.)

If the collector takes to heart what I wrote above, he will carefully identify each set of eggs. Suppose the first set he takes is a set of four eggs of the Red-headed Woodpecker; the bird seen; nest 20 feet up in an elm tree. If he knows the bird's number, he would write in his note-book the following short particulars: 1—375—4—20 ft.—elm, and he would mark each egg of the set No. 1. The small end of the egg is preferably the place for these first numbers. The tenth set, he finds, is a set of three eggs of the Yellow-billed Cuckoo. The nest, eight feet up in a wild plum tree. Here his entries would read: 10—387—3—8 feet—wild plum. Each of the three eggs should be marked No. 10. By this method, the first number always representing the number of eggs in the set, mistakes are almost impossible. If he saw the bird he should write "seen" after the last item. If the bird was caught or shot, he can mention it instead of "seen." The last two items explain themselves, and all these items except the first, must enter into the data of the set. It is not necessary to give materials of nest, except in the case of rare species. I follow the above method of authenticating to save time; but the collector who has plenty of that commodity to spare, can of course write out full particulars of each set in the field. Never trust to memory in these matters; have it in black and white.

The collector, having returned home and being ready to prepare his eggs, let him take them out of his box where he has placed them well wrapped in cotton, as taken, and unwrapping them, place each set by itself on the "dryer" described elsewhere (he will now begin

to appreciate that useful article) now getting his tools, not forgetting a glass of water to use in rinsing the eggs, he is ready to go to work.

The points of the drills, as bought, are always dull, and it is recommended to start the hole in the egg with a pin or needle. These useful articles are small, likely to get lost while working with, and make one more article to look after. You can dispense with them by carefully filing the point of your drill to a needle-like point. Select the least showy part of the egg, and holding it (the egg) in your left hand (the right if you are left-handed) put the point of the drill against the "least showy part," and twirl it (the drill) between the thumb and forefinger. Don't bear on the drill, as if you were drilling in iron, if you do you'll have a hole clear through both sides of the egg, something you don't want. The hole, being drilled until the largest circumference of the burr passes inside of the egg, don't try to pull it out, as a broken egg will be the result if you do. There is an internal pellicle lining the egg; if this is not cut out where the hole is drilled, it will interfere with blowing the egg. By bringing the burr of the drill up against this pellicle, as if you were going to remove it from the egg, and giving it the same twirling motion that you did when drilling, the pellicle will be cut all around the edges of the hole and the drill will come out. Now take your blow-pipe, and putting the point of it close to the hole, blow gently and the contents will come out. When incubation is more or less advanced, a larger hole must be drilled and the embryo removed with the hook and scissors, a tedious operation and not always successful, even with the greatest of care. Better let incubated eggs remain in the nest. A little experience will teach you how to differentiate fresh eggs from those that are too far advanced to save.

Never put the point of the blow-pipe inside of the egg, as a bursted egg will be the result, especially so, if your lungs are well developed. Having emptied the egg of its contents, the next step is to take a mouthful of water and inject it through the blow-pipe into the egg, rinsing it thoroughly. Large eggs should be filled half full of water and well shaken. Eggs treated in this manner are perfectly clean inside and offer no inducements to insects to harbor within, a thing they will surely do in eggs prepared in a slovenly manner. Having blown all the water out of the egg, take a soft cloth and wipe it dry, removing any foreign matter that may be adhering to it, taking care, however, not to rub off the number you put on it when collect-

ed and also notice that you do not rub off any of the markings on it. On some eggs the pigment is only loosely applied on the outside. Now place the egg hole downward, directly over one of the holes on your dryer and it will drain and dry in a few hours. Continue in the above way until you clean all your eggs, keeping each set to itself and adding another memorandum in your note-book opposite each set, as to the state of incubation of that set. When the eggs are dry fill out a data for each set. These particulars are taken from your note-book. Suppose he (the collector) takes the first set, that of the Red-headed Woodpecker. He will fill out a blank as follows :

No. 375. Name, Red-headed Woodpecker.

Collector, John Smith.

Locality, Boston, Mass.

Date, June 3d, 1887.

Set mark, 1-4.

Number of eggs in set, 4. Identity, bird seen.

Nest, excavated in an elm tree, 20 feet up; eggs laid on chips at bottom of cavity.

The collector will of course substitute his own name, locality and date for those given above, and if this should prove to be the second, third or fourth set of that species taken during the season, he would mark the set as 2-4, 3-4, 4-4 and so on.

He will mark every egg of that set 375 1-4, using a soft pencil, making legible figures, not too large, and putting them close to the hole in the egg. Never deface an egg by writing the date on it; the above is all that is admissible on a first-class specimen, and accompanied by the data is all that is necessary. If the collector reserves only one egg of the above set, sending out the others to correspondents in exchange, every egg sent out should be accompanied by a data, a copy of the original one made out for the set.

A few words now about forming a collection. Are you collecting hap-hazard, anything and everything, just so you can say that you have more eggs than the "other fellows?" If you do collect in this way, I'd advise you to quit at once. Do you collect, getting only the prettiest eggs, and having them under glass to look at? The Bower Birds of Australia build bowers and ornament them with pearly shells, bright colored feathers and other decorative material, and no doubt derives as much benefit from its collection as the collector who wants only the "prettiest" eggs. If you collect, however, to learn some-

thing from your collection, to make comparisons between the eggs of different species, to note the variations in eggs of the same species, to study the birds themselves in field, forest and closet; then I say, go ahead, collect in sets and in series of sets, always have your material for study well authenticated and your collection will always possess a scientific value as well as a pecuniary one, and you cannot be classed with the collectors who have been rather inelegantly termed "egg-hogs."

A few words about exchanging and I will close this article. Always use tin or wooden boxes in which to ship eggs. Cigar boxes need a cleat nailed inside on the ends to keep the lid from being broken in. Large boxes will also need a partition put in to strengthen the box and obviate packing too many eggs together. Roll each egg separately in cotton and pack them so they will not shake about in the box, but not tight enough to crush them when the lid is put down. Don't put data or other writing in the box if it is to go by mail, and don't nail the lid down, simply tie it with a string. Use some current price-list as a basis of exchange, and send the data to your correspondent in your letter of advice. Don't wrap thread or tissue paper around eggs after you have wrapped them in cotton. Your correspondent will want to swear if you do, at least the writer hereof has been strongly tempted to do so, when unwinding yards of thread from the eggs, or undoing nicely done up packages, perhaps an invoice of an hundred eggs or more, and each one wrapped and tied like a package of dry goods or groceries. This practice of doing up eggs begets profanity and broken eggs.

