

PART SECOND.

BRIEF INSTRUCTIONS FOR COLLECTING AND PRESERVING BIRDS.

The tools necessary to put up a bird skin are neither numerous nor costly. A scalpel, scissors, two or three sizes of tweezers and a fish-hook with the barb broken off will suffice for all ordinary work—remember that it's not the tools but the one handling them that does the work. Cotton to fill out the skins with, corn meal or plaster to keep the feathers from being soiled, and arsenic to preserve the skins are essentials. Having the tools and supplies, the next thing necessary is the bird, and the collector will have to rely upon his gun to secure that. Ninety per ct. of the birds taken in routine collecting can be killed with dust-shot—larger shot generally mutilates a bird and it will make a sorry specimen. Experience will prove a better teacher than any written instructions and I will not attempt to give any, except to say that small birds can always be approached closely and it is not necessary to load heavily—"puff" loads, I call them, will do. My ordinary collecting load fills a 16 bore cartridge only about one-fourth full. A 16 bore gun is the right size for collecting. With cartridges properly loaded, such a gun will bring down anything from an eagle to a hummer.

Having shot your bird, the first thing necessary is to stop up the mouth with a fluff of cotton; sometimes it is necessary to plug the nostrils and vent with the same material. This will prevent any blood or the juices of the body from soiling the feathers. A "gob" of blood can generally be removed with the knife-blade—a little experience will teach you the best way. Some collectors plug up the shot-holes, but I simply part the feathers and lay a fluff of cotton directly on the wound. This will absorb any blood that escapes. If the eyeball is broken, letting out the contents, stick the knife-blade into the eye, take the tweezers and by catching hold of the cut edge of the eyeball; the entire eye can be torn from the socket, being careful not to allow any of the glairy fluid to get on the feathers. Dry out the socket with cotton, and insert a pellet of it to absorb any of the juices that may remain. If the nostrils are too small to plug up, a small roll of cotton laid across them and the ends tightly tucked into the mouth will prevent damage. Never try to wipe off blood from feathers—you can't do it and will only make matters worse. Having stopped

all "leaks," make a paper cone or cylinder and drop your bird into it head-first, adjusting the wings and any unruly feathers. Make the cone or cylinder of such a size that the bird will fit closely, and have it of such a length that the end, or ends, can be pinched together, being careful not to bend or ruffle the tail feathers, and your bird will come out of its envelope nice and smooth even after a day's jaunt. A game-bag will do to carry the birds in, putting the heavier birds at the bottom and arranging all of them nicely in the bag.

Labelling is next in order, and is the most important part of the whole proceeding. Locality, date and sex are indispensable. The check-list number of the bird can be added, though not necessary. The collector's number is a requisite, as this refers to his register of specimens, giving full particulars of capture, etc. Length of bird and extent of wing find a place on the label, as also the scientific name of the bird—common name can also be given. Name of collector and contents of stomach are added by some collectors. By using abbreviations, all this can be put on the two sides of a medium sized label. Sex is denoted by the sign of Mars for male and Venus for female. L., length, Ex., extent, etc., etc. Labels with strings attached can be bought of any stationer.

We will now proceed to skin our bird. The first thing to be done is to take a measurement of the length, which is the distance between the tip of the bill and end of the longest tail feather. Lay the bird on its back on the table, the tip of the bill flush with a pencil mark. Take hold of the bill with the fingers or tweezers and with the disengaged hand take hold of both legs and pull, using force enough to get the curve out of the neck, (don't pull too hard) keep the bill flush with the pencil mark on the table, and mark where the end of the tail points. Measure this with a rule for the "length," giving dimensions in inches and hundredths of an inch. Distance between the tips of the outspread wings: place the bird on its back, head towards you, take hold of each wing at the bend and using moderate force stretch them to their full extent. Measure the distance between tips, and enter on your label as "extent." These two measurements can be taken only from the bird in the flesh. Length of wing, bill, feet, etc., etc., can be taken at any time from the dried specimen. Now make a paper cylinder the exact girth of your bird, securing it with a pin, this makes a good drying form. Lay the bird on its back (head to the left) and taking the scalpel (a sharp pocket-knife

will answer) part the feathers along the middle line of the abdomen from the vent to the lower end of the breast-bone. A bare space will be seen and here the incision is to be made, cutting only through the skin, from the end of the breast-bone down to and into the vent. This latter makes a sort of button-hole termination to the cut, and it is not apt to be torn in manipulation. Now with the blade of your knife carefully separate the skin from the flesh along the line of the cut. Take hold of the cut skin with the fingers or tweezers and keep working carefully, lifting the skin from the flesh (no force or cutting is required) until you meet with an obstacle—this is the thigh. Lay down your knife and taking hold of the leg, push it up inside the skin, (easily done) and with the scissors sever bone and muscle at the knee joint. Skin down the leg which will come out of the skin, like a finger out of a glove, to the heel joint. Scrape all the flesh off the bone and draw the leg-bone into its sheath and leave it. Repeat the operation on the other side, and remember that all this time the feathers along the edges of the cut have an unhappy tendency to get into the opening you've made. This can be prevented by putting a little cotton between the raised skin and body of the bird, and all the time you are working keep the flesh covered with the meal or plaster—this absorbs the juices and keeps the feathers from getting soiled. Having skinned both legs and worked the skin loose down to the tail, the next step is separating this from the body. All the tail feathers are inserted into what is popularly known as the "pope's nose." Set the bird upright on its breast on the table press the tail backwards, take the scissors and snipping away at the junction of the "pope's nose" and body until you sever the tail-stump from the body. Great care is required here, for if you through carelessness cut the skin, the cut will wander around and the first thing you know you have a tail-less bird skin. After the tail is severed from the body, use the back of your scalpel and separate the skin carefully from the rump (the adhesion between the skin and body is stronger here than at any other point.)

If you will now take your fishhook, attach a string to it, stick the hook into a firm part of the rump and hang the bird up where it will swing freely about the height of your breast, you will have both hands free to work with. Having hung your bird, work the skin away from the body, using the back of the scalpel blade or your finger nails for the purpose. NEVER pull a skin, as it will either tear or stretch so badly that all the after manipulations will fail to make a good speci-

men of it. Work down until you are stopped by the wings; and recollect that as you work, the skin is being turned inside out. When the wings are reached, you must sever them close to the body (inside the skin of course) just as you did the leg. Seize the wing-stump with the fingers and work the skin down as you did on the body until you come to the secondaries. These feathers are grown to the arm-bone (ulna) and require loosening from the bone. They can be stripped down by using the thumb-nail, taking care to work the skin loose all round to prevent tearing. Having skinned to the bend of the wing, the "ulna" is stripped of all flesh and allowed to remain, all the other bones with muscles being removed. Do not skin beyond bend of the wing. If the "ulna" or leg bone has been broken by a shot, a piece of sharpened wire can be made to take their place—the wing requires this bone to hold it in position. Having skinned the wings, leaving them turned inside out, skin down towards the head, which is the easiest part of the job.

You now meet with the head and it will take patient work to skin over this. Always remember to push and not pull the skin, and presently you'll be rewarded by seeing the skin slip over the head to where it is pinned to the head by the ears. With the small tweezers detach the membrane that lines the ear opening. Do this for both ears. You have now come to the eyes. Work very carefully here. Cut the eye membranes from the bone, and inserting the point of the scalpel lift the eye from its socket entire. It's hard to give instructions how to do this and it must be learned by actual work. Take care not to open the eye-ball or lacerate the eye-lids. During all this time the skin must be supported in your left hand, (left-handed people will work the contrary way) and must not be allowed to hang as this would unduly stretch the neck and give you trouble. You will now separate the body from the skin, and to do this, cut down the base of the skull with the scalpel, severing completely body and neck from it. Scoop out the brain through the opening in base of skull and your skin is ready for poisoning.

If you have no drawer in your table to hold the arsenic, a large shallow cigar box or any other box of suitable size will answer. With a spoon or spatula apply the arsenic to every part of the skin, (inside) putting plenty in the brain cavity, eye-sockets, mouth and on the tail stump. Shake off all the surplus into the box, the moisture of the skin causing sufficient to adhere. Roll up two small

pellets of cotton and fill the eye-sockets. You are now ready to turn the skin, and if you will remember how it was everted you will have no trouble in getting the head back. It requires a little dexterity to do this at first, but it doesn't take long to learn. Having turned the skin, pull the wings out and lay the skin on its back. Make a roll of cotton slightly smaller than the neck, put one end of this in the tweezers and work it gently up the neck until the empty brain box is reached. With the fingers of one hand hold the cotton in place, (the end in the brain cavity) and remove the tweezer and the neck is stuffed. Cross the wing-bones on the back, (some recommend tying them together) and make an artificial body of cotton, taking the natural body for a model, and work it carefully into the skin, keeping the end of the roll of cotton that you put in the neck in your left hand. When the body is in position, you can shorten the neck of the skin by pulling on the roll of cotton; or if you wish to lengthen the neck, a slight pull on the head will do it. Having the neck the proper length, tuck the cotton along the artificial body and bring the edges of the skin together. Arrange the eyelids and any feathers that may be awry, set the wings in position and slip the skin into the paper cylinder that you made before commencing the skinning. Having made your skin and written the label, the determination of sex comes next. Lay the bird on its side, (belly towards you) cut with the scissors from rump to the ribs, pushing the intestines aside and you will see the small of the back. Capping the kidneys you will see the testis, (if a male) "a pair of ellipsoidal bodies" generally of a dull whitish tint; if a female, the ovary, a white granular mass occupies the same position. Mark the sex on your label, cross the legs of the skin and loop the label on where they cross, and lay the skin away to dry.

The above instructions apply to nearly all birds; some Woodpeckers and Ducks cannot be skinned the usual way, the head being too large to pass through the neck skin. In such cases skin to the base of the skull, cut off the head inside the skin and turn the skin back to its natural position. Part the feathers in a straight line down the back of the skull and make an incision long enough to allow the head to pass through. After skinning, the head is put back and the cut sewed up, taking fine stitches—it's a tedious operation.

If blood or any other substance has dried on the feathers they can be washed out. Do this immediately after skinning and before filling out with cotton. Take a sponge and with luke-warm water wash out

the stains. Put on plenty of plaster or meal to absorb the moisture, pressing it down and scraping off with the scalpel. As it gets dryer, raise the feathers, sprinkling on the absorbent, and blowing on them gently to dry thoroughly. Dried blood can often be removed by scraping with the thumb-nail, holding a finger opposite the thumb for resistance. A bird will remove blood with its bill.

A few words of caution are necessary. Recollect that arsenic is a DEADLY POISON and exercise the utmost care, for the sake of others as well as yourself. Do not bulge out the eyes of your specimen. Make it look as natural as possible. Cotton is a springy substance and if you put in too much, it will give your bird skin a dropsical appearance.

In forming a collection, the amateur should be satisfied with a pair, male and female, of each species; but where the plumage varies greatly with the seasons he may have specimens enough to show the variations. The professional Ornithologist needs large series of each species; but such is not the case with the amateur. Thoroughly work up the birds of your locality before doing much exchanging. You will be much surprised to see what a large number of species you can gather in a district, easily collected over on foot. After you've learned to make a skin do not prostitute your knowledge to the making of "millinery skins." That is a depth to which the true collector or Taxidermist never falls. If you cannot determine your specimens send them to the "Smithsonian," or to the New York Central Park Museum. I believe the Ornithologists in those institutions will always help a beginner out. These instructions conform to my ornithological *Alma Mater*, Dr. Coues' excellent "Field Ornithology." Where I depart from his instructions the method I've given suits me better than his. We're not all of a mind. Should the collector desire to mount his specimens he must get some good work on Taxidermy. This will give full instructions.

Trusting I've made things so plain that "he who runs may read," I am,

Ornithologically and Oologically yours,

J. A. SINGLEY.