will neutralize the effect of the pathogenic ptomaïne producing each infectious disease. To relate here the details would carry us too far into the domain of organic chemistry. I may indicate, however, one other method, which, while having the same object in view, promises great success. Take, for instance, tubercular consumption. There are some animals that cannot be inoculated with the tubercle bacilli, because they are protected by nature against them. The question is, What substance in the blood — we believe it to be in the blood serum, that part of the blood which remains after the removal of the red and white corpuscles — of these animals prevents the development of the tubercular malady? If that substance can be isolated, the victory is won. Koch has taken some of the blood serum of an animal thus protected, and by transfusion brought it into the circulation of an animal specially predisposed to and inoculated with the disease. He succeeded in thus greatly diminishing the severity of the latter.

Professor Lister, on returning from his last visit to Koch in Berlin, said to the English physicians listening to his report, among other things, the following: "But while my lips are sealed with reference to the details, that much may I say, that before a few more years are passed the world will stand aghast at the discoveries made in Berlin. I have seen rats in the agony of lock-jaw, after the subcutaneous injection of a drop of fluid, within a few hours run about in perfect health!"

We are undoubtedly on the threshold of a new era, on the eve of a revolution, the greatest medical science has ever seen. The morning of a bright future has dawned; the light is ascending the horizon, and will soon shed its lustre from the meridian!

HOW TO MOUNT BIRDS WITHOUT REMOVING THE SKELETON.

BY ULYSSES O. COX.

To some, no doubt, it will seem useless to attempt to mount more than the skin of a bird; but, having had some experience with both methods, I wish to state what has been my success with the new one. The process is about the same that has been described by others, but the soap preservative is my own invention.

A pair of pointed scissors, scalpel, tenaculum hook, file, wire-cutters, several hooks of different sizes made of stiff wire, two pairs of forceps, one of the ordinary style and another with about one-eighth of an inch of each point bent out at right angles, are the tools that should be at hand. A dry poison should be prepared of one part arsenic and one part powdered alum. An arsenical soap should be made as follows:—

Group one.

Dry arsenic,	2oz.
Cake soap, any good,	2oz.
Potassium carbonate,	½oz.
Air-slaked lime, sifted,	½oz.

Group two.

Corrosive sublimate,	2dms.
Cyanide of potassium,	2dms.

Two or three moth balls, or one dram of camphor.

Put the first group in a vessel with enough water to dissolve it to the consistency of thick cream. Heat and stir until thoroughly dissolved. Dissolve the second group in another vessel in cold water, and when the first group is about cold stir in the second. Put the soap in well-corked bottles or cans. The cyanide of potassium, moth balls, and camphor, are not used for their preservative properties but to insure the specimens against moths or other insects.

A quantity of cotton, tow, wire of different sizes, and plaster of Paris should be at hand. For trial, select a medium-sized bird, say a jay or a robin, and clean off all dirt and blood-spots by first washing in clean water then drying with plaster of Paris. With the tenaculum hook catch the white coat of the eyeball and with a gentle pull remove the eye. Wipe the socket dry. Remove the other ball in the same way. With a wire, punch through the skull in the back part of each eye-socket and stir up the brain well. Fill the eye-socket with the dry preservative and stir it into the brain cavity. If careful, the brain can be so well poisoned thus that it will dry nicely. Fill the eye-sockets with cotton and proceed to the mouth. The forceps with bent points are for use in holding up the eyelids while putting in the glass eyes. Remove the tongue, and with it as much of the trachea and œsophagus as possible. Poison the mouth and throat well with the arsenical soap, and then sprinkle in a little of the powder. If there are any evident fleshy parts, chop them a little with the scalpel.

Open the skin from the tip of the sternum to the vent and push it back as far as you can conveniently. Remove the large muscles of the breast, working down to the wing; this can be done with a few strokes. Cut off as much of the loose flesh from the legs as you can conveniently. Open the abdominal cavity and with a stout hook remove the intestines. All the feathers may be protected from blood by taking a piece of tin and cutting in one side of it a deep U-shaped notch. The points of the U will fit up on each side of the bird. Several sizes of these tins will be found convenient. The intestines may be drawn out on the tin and removed. Wipe out the cavity with cotton, paint well with the soap, and then sprinkle it with the powder. Chop up the flesh at the root of the tail, and work the poison into it. After having thoroughly poisoned it, fill the body cavity with tow. Tow is preferable to cotton because wires are easily passed through it. Turn out the neck, remove the crop, œsophagus, and windpipe, hack up the flesh on the neck, and then thoroughly paint the skin and neck with the soap, and sprinkle with the powder. Your success depends on the care with which you put on the poison. Prepare two wires, one about six inches longer than the bird from head to toe, the other about the length of the bird. Pass the long wire into the bottom of one foot, up alongside the bones of the leg, just under the skin, through the body cavity, up alongside the neck, and out through the skull. Insert the second wire in the other foot in a similar way, but allow it to end in some of the bones of the body cavity. Place a little cotton in the space occupied by the crop, and begin at the neck to sew up the incision in the skin. Sew for a short distance, then fill the cavity underneath with tow or cotton. Be sure to fill it up well, for the parts will shrink some. Continue sewing until the incision is entirely closed.

With the bird on its back, spread out the wings and make an incision along the bones of each, press aside the skin, and poison the flesh well. If the bird is small, the powder is sufficient; if large, the soap should be used; and, when possible, some of the flesh might be removed. The bird is now ready to be set up, and here the method is no different from others. It will be found that, instead of the feathers on the back being displaced and ruffled, they are nice and smooth. A wire passed through the bend of one wing, through the bird and out through the bend of the other wing, then both ends bent over, will hold the wings in place.

As to time, I find that it takes me about as long to prepare a specimen this way as any, but my specimens are very much nicer. When the bird is poised, the tail and wings fastened, and the glass eyes set, there is little more to be done.

I have purposely placed some specimens thus prepared with some moth-infected birds. They have been there all summer, and, so far, are sound. If properly stuffed the specimens do not shrink and appear smaller than the original. If the muscles are well cut apart, the bird will dry just as poised. The largest bird I have tried to preserve in this manner is a great blue heron (Ardea virescens), and it dried nicely. I have several owls thus preserved. In the owls I took the brain out through the eye-socket. While large birds can be preserved in this manner, the method is better suited to small and medium-sized ones. Warblers and wrens, birds with very tender skins, are thus easily preserved. In such small birds as the warblers, only the pectoral muscle need be removed, but the others must be well chopped up and poisoned with the soap. Specimens for study, not mounted, can be nicely preserved by this process, and they are very durable.

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