

From The Nestbox

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Assisted Hatches A New Technique

[Editor's Note: The AFA Watchbird serves as a medium wherein aviculturists can share experiences. Aviculture is as much art as science and not everything that works for one person will work for another. But when something has worked for one birdkeeper, we like to let others know about it. Indeed, if you have a success story, why not share it with us?

When reading experiences of others, use your own judgement as to whether a certain technique or procedure might work for you, and advice from an avian vet is always helpful. Ed.]

There are times when the only way to save a chick is to give Mother Nature a helping hand and assist the hatching process. Assuming that all will go well and that the chick will successfully hatch from the egg is not realistic in all situations. Knowing when to assist and taking appropriate action in a timely manner is sometimes the only recourse to save a chick.

With Cockatiels the most common situation that requires assistance is when a chick is trapped in the shell due to low humidity. Other

causes include the parents attempting to help the chick out of the egg too early, opening an egg too soon, or breaking an egg during the early pipping stage.

Over the years I have perfected my method for assisting hatches, and assisted-hatch losses have been cut to five percent or less. First, I'll cover the easiest way to assist a hatch, and then a unique emergency procedure to get the yolk sac to draw into the body when the assisted hatch is attempted too early, or a new hatch is found in the nest with part of the yolk sac still outside the body.

Tools

The tools you will need are simple and basic. All that is needed initially is a candler, a darkroom, a fine-tip permanent marker, and a small cup or container on heat for monitoring an egg. Once you start assisting the hatching process, you will also need Q-tips, distilled water, and Pedialyte if the chick looks dehydrated. Another thing you definitely will need is patience. Trying to rush things is the leading cause of accidents and deaths. On assist hatches where the blood and yolk are still not absorbed it can take up to 24 hours of carefully monitoring the baby until it is fully ready to emerge from the shell.

Know Your Air Cell

Probably the most important thing to know is the size of the air cell of the egg of the species you will be working with. Midway through incubation, candle a clutch of eggs to see the approximate average size of the air cell, which is the upper quarter of the egg.

This knowledge will be a good visual guide for you to use when any unusual changes in the size of the air cell occur as the egg nears hatching or starts to pip. With low humidity, that air cell will get larger in size. With excessive humidity the air cell will decrease in size. By observing air cells, you will discover that the majority of DIS (dead in shell) egg problems occur in the low

humidity category.

Pipping

When you candle the egg prior to pip, the solid mass where the chick is located in the egg will appear to be an even line around the egg, and have a dull red-orange look, with visible veining right up to the edge. NEVER attempt to assist at this stage! When the baby pips (or breaks into the air cell) you will be able to see that a portion of the solid mass is lower, which is where the chick's beak and head is located. At the first external pip, or break of the outer shell, place a small black dot with the permanent marker to mark the beginning of the pip. Over a 24+ hour period of time you should be able to see, or lightly feel with a fingernail tip, a weakness in the shell going counter-clockwise around the egg. Between candling and monitoring the egg, you can place it back with the parents. If you found it off to the side in the nest, replace it to that location. If you removed it from under the birds, put it back under them. The only time you will not return an egg to the nest is once you have removed part of the shell. Then you will need to keep it in a small container or cup with heat.

Temperature

The minimum temperature that I prefer is approximately 95-97° F. The reason for the lowered temperature is that heating and cool down tend to be just as much a stimulant as if a chick were moving in the egg. Since I use the membrane to prevent the chick from turning, the slight chilling stimulates movement for both warmth and circulation of blood during the drawing in of blood and then the yolk.

Candling

You also will be candling, specifically looking at the place on the egg where the air cell and solid mass meet. If you see prominent red veins, the chick has not drawn in the blood, and it is too soon to assist. When most of the blood is

drawn in this area will look orangish in color, with very faint lines from the collapsed veining. You will know that a chick is definitely trapped when you can see that the veins have collapsed but the chick has not progressed more than 1/4 to 1/3 of the distance around the egg from where that first black dot was placed in a 24-hour period.

Opening the Egg

It is important to remember when you must open any egg to ALWAYS go through the air cell end. By entering through the air cell end you are doing the least harm while creating a window for viewing. The first step is to candle the egg to determine where the head and beak are located. You will see a dark area which is the eye, and the beak will be the lowest point where the air cell and solid mass of the egg meet.

I start removing the shell above this area. Once I have opened the air cell area, I now just remove most of it above the membrane/solid mass of the chick, taking care NOT to disturb the membrane, making it easier to view and work with the chick. If the chick appears to be sleeping and still, this is an indication that it may not have drawn in the yolk sac, especially if you see an occasional opening and closing of the beak.

If a chick has died prior to pipping, the membrane will appear clear with thin spidery red or brownish blood veins. The membrane covering the chick should have a papery white appearance. The membrane will look dry, white and will appear to have been vacuum pressed to the contours of the chick. If dehydration is severe you will also notice that the membrane has separated from the inside of the shell, especially down the back of the chick. To see the chick better, use a wet Q-tip and dampen the membrane working towards the beak.

The first thing to look for is whether the blood veins look thickened (with blood) or like thin brown spidery-looking webbing. In either situation, if I see beak movement of

the chick and know it is alive I will gently penetrate and push back a small amount of membrane starting at the tip of the beak and just enough so that the beak is exposed up to the nares. If there is any bleeding, I definitely know that the chick still needs to draw the blood into the body yet. The broken membrane and bleeding does not create enough blood loss to be life threatening.

Before the chick actually emerges from the shell, look at the abdomen to be sure that the yolk is absorbed. If so, it is safe to allow the chick to come out of the egg. I use the empty shell turned open side down for the chick to prop against.

Place the chick in a small, warm container for monitoring the egg. I try to keep the membrane moist until the blood is drawn in. Throughout this time the membrane must continue covering and holding the chick in the egg.

You will also hear the chick vocalize. When drawing in the blood, you will hear a softer chirp, with very little body movement except for the beak and head. Once the chick starts to draw in the yolk, the vocalizing changes to a sharper louder frantic series of sharp quick chirps. Once the vocalizing changes, let that membrane stay dry on the chick – this helps keep it in the hatch position.

I used to remove the membrane to the upper portion of the chick, and would have chicks trying to get out of the shell before the yolk was fully absorbed, and I'd have to keep positioning them back into the shell and re-positioning the right wing on the head. The chick will do the vocalizing with each con-

traction of drawing in the yolk. You will then see more movement below the shoulders of the chick, feel the feet pressing or tapping inside the egg, and perhaps see the egg slightly rocking.

When the chick is quiet, it is resting and not drawing in the yolk. It may go through several series of chirps (I have never timed this), and resting before the yolk is fully absorbed. Once the yolk is absorbed, the vocalizing is not as sharp and frantic sounding. Movement of the chick is different with its head and shoulders moving upward trying to get through the membrane restraining it. I will then wet and roll back the membrane from the upper portion of the chick. Some chicks will actually spring out of the shell.

Out He Comes

Before the chick actually emerges from the shell, look at the abdomen to be sure that the yolk is absorbed. If so, it is safe to allow the chick to come out of the egg. I use the empty shell turned open side down for the chick to prop against. I carefully give it a little water and wait about a half hour and then return it to the parents or another nestbox with new hatchlings if the parents already have several older chicks in their nest.

What About Problems?

The above instructions pertain to optimal cases in which all goes well. But, what if you are faced with a chick not fully absorbing the yolk, or the parents breaking open an egg to soon, or a hatched chick with a little yolk still protruding from the body? The chick has almost no chance of surviving if the yolk remains out of the body. Sometimes a chick may be too dehydrated and weak to be able to fully draw in the yolk. In situations such as this, I have had to help the chick to draw the yolk in. The smaller the exposed sac, the more successful maneuver will be.

My first few attempts at getting the yolk to draw into the chick's body

failed. I tried continual pressure and ruptured the sac in some cases. I had one little determined chick that kept putting its little feet up against my fingertip as I was trying to apply some pressure to the yolk. I realized that while its feet were against my fingertip it also was pressing its back into the palm of my hand, which enabled it to produce strong contractions to draw the yolk sac into its abdomen. VOILA! A light bulb moment occurred and the education that I got from that determined little chick has saved many Cockatiel lives. I would like to share with you the procedure that I learned.

Make sure your hands are warm and sterile before proceeding. Once you begin the procedure, you will be holding the chick in your hand until the yolk sac is drawn into the body. Begin by placing the chick on its back in the cupped palm of your hand. Most chicks will vocalize during this time. Position your index finger so that it is facing towards the head of the chick, and directly above the yolk sac and feet. Then apply

gentle pressure to the center of the yolk sac. Too much pressure, especially when the chick is not vocalizing can cause rupture of the sac. As I am pressing the yolk, I use my index finger as counter pressure against the underside of the feet. As the baby chirps you will feel strong contractions, as its back presses against your palm and the feet press against your fingertip. During the contractions, the chick will make short, loud chirps in sequence with each contraction. When the chick stops vocalizing, slightly release the pressure on the yolk sac. Keep just enough light pressure to the center of the yolk so that it does not pop back out of the body. Each time the chick starts to chirp, apply pressure to the yolk sac and support to the base of the feet. This may take anywhere from two to six series of contractions (depending on how much of the yolk sac is out of the body) before it is fully absorbed into the abdomen.

Once it is drawn in, I apply pressure through one more series of contractions and then gently rotate

my fingertip in a circular motion to twist the umbilical cord. I hold my finger on the cord for a minute or two, during which time the chick may still chirp softly. If you remove your finger too soon, especially when the chick is chirping, some of the yolk could pop back out. While the chick is quiet, I blot away any excess moisture to the cord and abdomen. If the area is too damp I apply a small amount of cornstarch or flour. If I have the empty shell half, I place the chick back in it and return it to the warm container. If I don't have the shell I very slightly dampen the area where I will lay the chick in the warm container to prevent the cord from sticking to the tissue or bedding. If the chick looks weak, I carefully feed it a drop of distilled water or Pedialyte.

Assisting a hatch is a scary experience, especially the first few times. I still get the shakes while doing it but it is also rewarding, especially when I know that without assistance the chick would have died. ➔

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