

Late Winter 2021

March 2021

The Fledgling

The official Newsletter of the Missouri Bluebird Society



The Missouri Bluebird Society is an Affiliate of the North American Bluebird Society

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Letter from the President:

Dear MOBS Members,
This letter is shorter than usual because this newsletter is packed with information from several contributors. My thanks to everyone who took time to contribute to this issue. As the calendar is telling us it is Spring, the weather keeps reminding us that Winter is not really over in Missouri. Take time to go over the submissions here to see what our Bluebird friends are up to. And you will definitely want to read “Mealworms- Separating Truth from Misguided Information” beginning on page 8. I particularly want to thank Dan Gleason, the author of that paper, for granting us permission to reprint his paper in our newsletter, and Ron Dudley who gave permission to use his incredible image of the Loggerhead Shrike on page 11.

I do know our Bluebirds and our other native cavity nesting birds in Missouri have benefitted from the nest boxes you care for. When we supply shelter along with food and water for our birds during the winter we are often rewarded for our efforts. Thank you for all of your dedication.

My winter surprise this year along with my Bluebirds was a Baltimore oriole in February, feeding at the Sunflower hearts (inside a caged feeder!) and visiting the heated bird bath on my deck.

Do what you can to help the Bluebirds,

Steve Garr,
MOBS President

Left: Baltimore Oriole 02/10/21 Jefferson City, MO



Photo by Steve Garr



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Transitioning Nesting Boxes from Winter to Spring...and then to Summer

WINTER



Nest boxes should provide proper shelter year-round. Just a few alterations (like covering ventilation and drain holes— see pic right) can give added protection against cold temps for roosting birds in winter.



SPRING

Depending on the temps, consider keeping your most-frequently used boxes in early spring “winterized” through the first nesting. That way you will be ready to keep occupied boxes warmer during spring cold snaps. Then it’s time to concentrate on Predator control and routine monitoring! Find plans for building the MOBS grant box predator baffles Here:

<http://www.birds-i-view.biz/files/MOBS.GrantBaffleInstructions.pdf>



Of course proper nest box design is important in ANY weather. Below is a list of nest box features that will benefit all native cavity –nesting birds. (Slide taken from MOBS Educational Power Point program found on the Education Page of MOBS’ website.)

Nest Box Features that help protect Bluebirds:

- Adequate Roof Overhang!
- Proper Drainage
- Well Ventilated
- Deep enough to protect the nestlings
- Light Color
- Side or Front opening
- Mounted on a Metal Pole
- Minimum of 4 ½ feet high, but not so high as to impede easy access for monitoring



SUMMER



It is important to protect our native cavity-nesting birds from HEAT in those occasional Missouri Summers when temps inside the nest box can reach **over** 100 degrees for days on end! Heat protection is important EVERY nesting season...but some summers extra protection is critical to egg and nestling survival. Find a “Materials List” for making temporary box alterations to help protect against excessive heat here:

<http://www.birds-i-view.biz/files/bivHEATmaterialsList.pdf>

The Missouri Bluebird Society 2020 Mail-in Raffle WINNERS!

Many THANKS to all who participated!



Because we had to cancel our 2020 conference due to the pandemic, (thus eliminating our Annual Auction/Raffle) MOBS Board elected to host a mail-in Raffle. Sixty Eight members participated and MOBS raised \$945.00!



And the Winners Are...

Audubon Great Blue Heron Print:

Dana and Ethan Duke,
Marshall, MO (top left)

Audubon House Wren Print:

Dana and Ethan Duke,
Marshall, MO (top left)

The Darling Bird Quilt:

Cindy and Joy Haeffner,
Hermann, MO (top right)

Audubon Oriole Print:

Leonard (pictured) and Ellen
Conrad, Stover, MO (lower right)

The Bluebird Basket:

Fred and Susan Burk,
Kirkwood, MO (lower left)



THANK YOU

MOBS member **Terry Darling** for creating and donating the Beautiful "Darling Bird Quilt". We also thank our anonymous donor of the framed Audubon Prints. AND, Thanks to everyone who purchased tickets!

One of *Those* Winters in Missouri

Fielding calls about “winterkilled” Bluebirds in nest boxes **by Steve Garr**

The article blast we received here in Missouri and other areas in mid February was certainly hard on our Bluebirds. Scattered reports have started coming in of finding dead bluebirds in nest boxes. Periodically, areas have winters with extended severe cold that result in this situation with Bluebirds in particular. Often, in these circumstances the Bluebird “hosts” feel they have done something wrong or didn’t do something they should have. Please know that is truly not the case in the vast majority of these cases. I think rarely is lack of food or water the cause. For the most part it involves the habit of our Eastern Bluebirds of piling into a cavity (whether a nest box or corner or piece of equipment or whatever) to stay warm. Even when you have SEVERAL nest boxes available within feet of each other they will all pile into just one or two. In these super cold temps for such a long time, sadly, the birds on the bottom can just get smothered.

Please do not think this means you need to close up nest boxes! They provide such valuable winter cover for many birds. However, while Carolina Wrens or Downy Woodpeckers or Chickadees may roost in the boxes for warmth they rarely roost in them with more than one or a few individuals. (I have never seen a box with more than one Downy at a time roosting in the box.) Bluebirds on the other hand can sometimes have 20 or more birds inside a standard size nest box. (sometimes the last one in still has their tail sticking out of the box). This is OK unless they are in there for an extended length of time under extreme temps. If you have a very successful breeding season (which is great!) and lots of Bluebirds, you are more likely to see more dead bluebirds in the boxes in these unusually cold years.

There has been some research and much speculation as to whether or not these “winterkilled” birds in the nest boxes are local resident birds or if in mid to late February some of them could be birds that were on their way back north to their breeding grounds. I don’t know the answer to that question positively, however I do know that here in Missouri we generally have the highest number of Bluebirds coming to our feeders, bird baths, and yards in the month of February.

My good friend (and MOBS member) Bob Peak has perhaps done more research and documentation on “winterkill” in Bluebirds than anyone I know. Bob and his wife Judy monitor an extensive nest box trail at Land Between the Lakes National Recreation Area. They also maintain a trail in Henderson, KY. The Peaks have a vast

number of boxes (over 200) and decades of winters and nesting season data from which to pull when researching the loss of bluebirds in the winter in nest boxes. Naturally when I began getting calls a few weeks ago about dead Bluebirds in boxes I reached out to the Peaks. Given the size of their trail and the number of boxes they monitor, it was not surprising to hear they had also been finding dead bluebirds in some of their nest boxes. Bob wrote a very interesting paper concerning winterkilled bluebirds which can be found on the NABS Website in the Summer 2016 issue of the *Bluebird Journal*.

Roosting boxes (boxes designed for roosting and not nesting) and roosting box plans are available fairly widely. Some Bluebirders feel they are very beneficial to use—others do not. Perhaps that is a good topic for a future newsletter.

This I do know: As important as it is for us all to turn in our Trail Summary Report each season to MOBS’ nesting data chair Greg Samuel—this year it will be even more important. Enclosed in this newsletter is a recording form for you to make copies and use on your trail if you would like. (this is not the SUMMARY report form you will turn in to Greg. That form can be found on the MOBS website and is distributed annually in the newsletter). However you choose to collect nest box data on your trail, be sure to send your summary report to Greg at the end of the 2021 nesting season.

I know this is not happy news or a fun part of birding but I thought it was important info to have and **I hope Bluebirders will take heart in knowing their efforts for our native cavity nesters ARE worthwhile and beneficial.**

Thank you all who have been hosting bluebirds year -round in Missouri.



Above: Bluebird in Winter snow. After completing my initial nest box checks on my trails I am relieved to say I was grateful not to have a picture of dead bluebirds in a box to use for this article.

A Surprise on the Trail

By MOBS Member Denise Zimny

What a surprise!

I've been monitoring Bluebird trails for five years and every year brings new learning and challenges. One year it was Queen bees in two of our boxes at Wind Haven in Columbia. Another it was House Sparrows fighting a pair of Bluebirds for the nest box. This fall it was Deer mice nesting in our bluebird nest boxes.

Kitty, Barb and I encountered 2 mice nests in 2 of our boxes on one of our new trails in Ashland. Of course I was surprised to pull out a mouse

when I was cleaning out a box. I didn't see the mouse initially...it must have been burrowed under the nesting material. It was in a box that opened from the top.

Anyway, when I pulled out a handful of nesting material I looked in my hand and there was a mouse. Of course, being the Master Naturalist that I am, I screamed, LOL! But I was totally unaware of the danger it presented. Kitty tried to warn me not to proceed to clean out the box because she had carefully read the book that I had loaned her, **The Bluebird Monitors Guide**. But I didn't listen. Luckily I had a mask on because of COVID. After looking into the next box and seeing nesting material similar to the box with a mouse in it, I bravely told Barb she was welcome to clean it out. Guess what! After removing the top of the nesting material she discovered a Momma mouse and her babies. We left them in the box.

Anyway, monitors need to worry about more than the surprise of a mouse in their hand. Deer mice and several other common mice species sometimes carry a viral disease called **Hantavirus**. It can be fatal to humans. It's more common in western states but has been seen in all states in the continental U.S. Just breathing the dust or other airborne particles that are contaminated with mouse waste can infect humans. It has the same symptoms as COVID19! Google Hantavirus for more info.



What to do if you find a nest in your nestbox or in your garage for that matter...CDC recommends that you make a 10 percent bleach solution, put it in a plastic spray bottle, and use it to wet the nest material thoroughly (not just a light spray). Let the bleach solution soak into the mouse nest for at least 20 minutes before you try to remove the nest material from the nestbox.

Denny Zimny
MMN Class of 2015
.0321_ZIMNY





Good News News!

Winning on the Golf Course



The State Bluebird is a special project of Ron Darling's and Lake Bloomers Federated Garden Club of Missouri. Bird and Pollinator Conservation projects are heavily supported and it is no small feat Ron has established two nesting box trails at area golf courses. This is in addition to the three trails Lake Bloomers Garden Club maintains and monitors, including an Indian Rock Golf Course facilitated with Chris Jackson's (General Manager IRGC) approval. So when the season ended and final bird numbers were tallied, Ron saw a

natural competition emerge from the three golf courses he helps monitor.

Lake Valley Golf Club has 8 nest boxes that produced 51 new bluebirds, or 6.37 baby birds raised and fledged per nesting box.

Deer Chase Golf Club has 10 nest boxes that produced 77 bluebirds or 7.7 birds per box and 5 tree swallows.

Indian Rock Golf Course has 9 nest boxes that produced 74 new bluebirds, at 8.2 raised and fledged birds per nest box.

Conclusion: The beautiful grounds and natural habitat of Indian Rock Golf Course is the winning habitat in our area for the Missouri State Bluebird to raise their families!

**Congratulations IRGC AND CHRIS JACKSON and thank you
for your continued support.
Lake Bloomers Garden Club**

Submitted by MOBS' Life member Ron Darling

CONGRATULATIONS Forest Park

Voted 2nd Best City Park in the Nation!

(USA Today's 10Best Readers Choice Poll)

Many of our members will recall the wonderful time we all had at the 2019 Bluebird Conference at the very Bluebird Friendly Forest Park in St Louis. **Good job Forest Park!** Learn more about Forest Park at www.forestparkforever.org



The Birds and Bees Festival 2021

May 6th—8th



The Arrow Rock Birds & Bees Festival was started by the Missouri River Bird Observatory (MRBO) in 2019 in partnership with Experience Arrow Rock and in conjunction with the 17-year-old Arrow Rock Garden Market. Despite a cancellation in 2020, both are intended to be annual events.

The Birds & Bees Festival's goal is to raise awareness for animals, plants and nature in general and provide a fun, family-oriented experience in the surroundings of Arrow Rock. Continuing unpredictability in the status of the Covid-19 pandemic has resulted in MRBO planning a hybrid Birds and Bees event for 2021. That is, **we will have a wide variety of online offerings coupled with small, Covid-safe, in person events in Arrow Rock. We'll be using a virtual event platform to deliver a fun, seamless experience for attendees at home with presentations, games, social opportunities and more.**

The proposed Birds and Bees Festival schedule is:

- Thursday, May 6th evening - VIRTUAL: Informational session: how to use the online platform . Festival welcome/kick-off .Opening Keynote
- Friday May 7th, 9 a.m. - 4 p.m. (on the hour) - VIRTUAL: Series of 15-minute "lightening" presentations throughout the day on such topics as building a better bird house, beekeeping, native insects and gardens for birds. Exhibitor and informational booths open
- Friday May 7th evening - VIRTUAL: Happy hour and interactive game
- Saturday May 8th, 8 a.m. - 4 p.m. - IN PERSON: Guided nature outings in Arrow Rock scheduled for various times throughout the day, to include birds, plants, insects, history, fishing, herping. Groups are limited to 10 participants and must follow Covid recommendations in place at the time. Advance registration required. Arrow Rock Garden Market 10 a.m. - 4 p.m. with plant vendors outdoors on the J. Huston Tavern lawn . Self-guided scavenger hunt for natural features around Arrow Rock. Participants submit their results online to be eligible for prizes.
- Saturday May 8th, 8 a.m. - 4p.m. (on the hour) - VIRTUAL: Series of 15-minute tutorials throughout the day, continued. Exhibitor and informational booths open
- Saturday May 8th, evening - VIRTUAL: **Keynote: Doug Tallamy, author of Bringing Nature Home**
Throughout the festival, we will provide a platform for attendees to locate and order from native plant vendors via the GrowNative! program. The festival will also include an ongoing passport game for attendees and a raffle.

Basic festival registration fee = \$8 (per household), with guided hikes an additional \$3/ per person. Attendees that register by 4/30 will receive a festival package by mail.

Check out www.mrbo.org for more info.
NEW programs have already been added!

Mealworms - Separating Truth from Misguided Information

Dan Gleason, 2021 (See biographical information at the end of this article)

Reprinted here with permission. Original paper and many very interesting posts by Dan Gleason may be found here: <https://eugene.wbu.com/mealworms-article>

Summary: Recent social media and Facebook posts regarding the safety of feeding mealworms to wild birds have caused considerable concern amongst people who feed birds in their yards, among wild bird rehabilitators and amongst people who own stores catering to the backyard naturalists who love to watch birds. One Facebook post in particular was sent out and shared repeatedly which threatened that baby birds will die if fed mealworms, particularly freeze-dried mealworms.

This paper examines the claims in the initial social media and Facebook posts to determine which claims are false and illegitimate, and which have a kernel of truth, and how the original posts allow the reader to come to misleading conclusions. The author of this paper follows the scientific facts to determine the validity or lack thereof of the original social media author's claims.

Mealworms are not really "worms" but are the larval form of the mealworm beetle, *Tenebrio molitor*, the scientific name for these insects. They have a short breeding cycle and lifespan and can easily be raised in large numbers, making them an easy animal to be grown and used for scientific research

and as food for insect-eating animals. In this context, we are looking at mealworms as a food that can be easily provided to wild birds.

Like many topics, much information can be found on websites and blogs about mealworms. Unfortunately, some of this information is provided by well-meaning, but badly-misinformed people who publish information on their sites that is completely wrong. It is my intent with this article to provide you with the most accurate information I can about mealworms and directly refute some of this incorrect and misleading information.

Before I address some disinformation I have read, let me first state my view about mealworms. They are a good food source that you can supply to attract wild birds. Live mealworms are far better than dried mealworms in a number of ways but both work well. Baby birds would be better off with live mealworms which are easier for the young birds' digestive systems to handle. Mealworms are not high in nutritional value but do provide a good supplement, since wild, natural insects are a superior source of nutrition. Mealworms are raised in very large quantities: one Chinese insect farm ships out over 50 tons of live mealworms per month and over 200,000 tons of dried mealworms per year. Most of these are for the human, pet and other food markets, and edible insects for human con-

sumption are becoming more popular in Asia and parts of Europe. Because mealworms are so easy to raise and can be grown in such vast quantity, they are often not fed a highly nutritional diet, and wheat or oat bran is the usual substrate used for growing them. There is research being done at Stanford University regarding feeding them polystyrene and early research indications were that the mealworms fed on it were still full of nutrition; the research was initially begun as a way to recycle polystyrene. Because of mealworms' low nutritional content, most rehabbers moisten and coat the mealworms with a nutritional powder formulated to meet the needs of young birds. **But please be assured that providing mealworms to birds does them no harm. They will love the treat and you will have the pleasure of attracting birds to your yard.**

Some of the information that follows may, at first, not seem directly related to the issue of feeding mealworms. But bear with me. There were/are many factual inaccuracies in some of the blogs and websites that promote a point of view that feeding mealworms is dangerous or fatal to some birds, and many of the inaccuracies involve a misunderstanding of bird biology. I want to correct some of the misconceptions, and in so doing, I hope to give you a better understanding about why some of the things being said don't make sense. Getting a better understanding of some basic bird biology will help you

Original paper found :

<https://eugene.wbu.com/mealworms-article>

Our thanks to author Dan Gleason for granting permission to reprint the article here.

Mealworm Truth...continued from page 8

to understand why some statements are wrong and how this relates to feeding mealworms.

One particular article has had widespread distribution and, unfortunately, contains many errors. It claims that mealworms, particularly dried mealworms, are deadly for birds. The claim is that the dried mealworms become compacted in the stomach and cause a bird's death through constipation and dehydration. First, let me reassure you that this does not happen to wild birds. I don't know what the author has seen but they are misunderstanding what they think they are seeing. A compaction problem is not likely to occur in wild birds. Expert, well-respected wildlife rehabilitators from all over the country say they have not seen this. Although they have never seen this in their years of work they can imagine conditions in

which it might occur, but ONLY in rehab or hand-raised birds, never in wild birds. If it occurs in rehab birds the birds would need to be suffering from other conditions first, such as dehydration and emaciation, and these would not be found in otherwise healthy birds. Additionally, it would be an irresponsible rehabber who fed only dried mealworms. If such compaction of mealworm exoskeletons were a problem, then you would have to conclude that many of the insects birds feed on in the wild could also be a problem. Many species of insect prey have harder, more indigestible parts, such as the carapaces of many adult beetles or the wings of many insects. Birds have eaten such insects for millions of years and not died of "compaction."

I think that what is really being seen in the case referenced (in the now-deleted

article) is normal but misinterpreted. To understand this, let's first examine some basic bird anatomy. The stomach of a bird has two parts: the forward portion of the stomach is called the *proventriculus*, and is where enzymatic digestion occurs. This part of the stomach is very, very acidic with a pH often below 2.0, and its structure is very well-developed in birds of prey, fish-eating birds and insect-eating birds including many songbirds. The rear portion of the stomach is the *ventriculus*, or more commonly referred to as the gizzard, and is the muscular portion of the stomach. Contractions of the strong muscular wall of the gizzard are very efficient at breaking up seeds and other hard material not dissolved by the proventriculus, and seed-eating birds' gizzard is very well-developed.

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Is it time to Renew your MOBS Membership?

Memberships expire on **December 31st of the year of expiration**. Check your mailing label to see if you need to renew.

Please mail your renewal form, along with your check or money order (payable to **MOBS**) to:

Missouri Bluebird Society/ P.O. Box 105830/ Jefferson City, MO 65110

Name: _____ Phone: _____

Address: _____ city/state _____ Zip _____

County: _____ Email: _____

Membership Levels:

Individual one year membership \$9.00	DONOR (Annual) \$50.00	*Family LIFE Membership \$175.00
Individual two year membership \$16.00	SUPPORTER (Annual) \$100.00	**Senior Family Life Membership \$100.00

*Family one year membership \$15.00

*Family two year membership \$28.00

*For individuals residing at the same address

**For individuals 65 + years old

How many nest boxes do you monitor? _____

How long have you been a Bluebirder? _____

[illegible]

Mealworm Truth...continued from page 9

Both parts of the stomach are well-developed and fully functional in many songbirds as they feed on both insects and seeds: food passes from the proventriculus to the gizzard which macerates seeds, etc. before passing this predigested food on to the intestine. Any indigestible material is retained by the gizzard which then compacts it into a pellet. Eventually, this pellet is pushed forward and returned to the proventriculus. It may be held here for up to several hours in the case of owls and other birds of prey, or ejected much more quickly in songbirds. Because the pellet blocks the digestive path, it must be forcibly regurgitated before another meal can be eaten, whether that is in hours or minutes. What the article refers to as “compaction” and that the author says is deadly for the bird is simply this undigested material being formed into a pellet by the gizzard or being held in the proventriculus before regurgitation. This is normal and not the sign of a bird in distress or being killed. All birds that cast pellets do this!

Just as an aside here, owls are probably the birds most people are familiar with as casting pellets. That's because owl pellets contain feathers or fur and bone, often with the complete, although detached skeleton of a small mammal. This happens because owls do not have a low pH in the stomach; a very low pH (very acidic) in other birds of prey dissolves the bones of prey species. Owls do not have the low pH so no bone is dissolved. The pellets of most birds that form them are not so tightly compacted or as large as in owls. Cormorants cough up pellets that are mostly fish scales, these quickly fall apart and usually not enough remains to be found by curious humans. Songbirds cast pellets often made up of insect exoskeleton parts and insect wings.



Photo: Loggerhead Shrike casting a pellet of the inedible portions of its recent meal.

Copyright Ron Dudley, image used by permission

The article in question also included a photo purported to be fecal matter from a sparrow that had this supposed compaction problem. In that photo, one could clearly see fibrous matter in the sample. But this photo is NOT of fecal matter! These are

pellets of indigestible matter that the bird has regurgitated. I am not alone in this assessment: every bird rehabber and avian veterinarian who has seen this photo has identified it as a cast up pellet and not fecal matter.

Because dehydrated mealworms are dry, an assumption is being made that dehydrated mealworms must be rehydrated before being consumed and that many birds don't drink water. This idea simply is NOT true. Any rehydration necessary will happen internally and the birds will not become dehydrated in the process.

Thirst is natural and if a bird, any bird, is thirsty it will drink from an available source. Dry seeds are eaten and ground by the gizzard without a problem so there is no reason to believe that some dried mealworms cannot be equally well-handled by the digestive system. The article also states that only some birds drink water but others, specifically

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chickadees, don't drink and are thus in danger of becoming dehydrated. It's not stated why there is a belief that chickadees don't drink and this makes no sense.

Chickadees most certainly do drink water, and frequently. It may be surprising to some people that winter is a time when dehydration can occur. Chickadees regularly come to open water to drink during the winter and in frozen conditions, they drink from icicles and eat snow for a source of water. Hot weather can also bring the risk of dehydration and chickadees seek open water at that time as well. **Eating dried mealworms does not cause dehydration in birds and they are perfectly capable of getting water if they need it.**

It has been stated that dried mealworms are full of fat and therefore, birds will gorge themselves on them. The assumption here seems to be that if we humans like fatty foods, then birds must like them as well. It is NOT a safe assumption that human feelings and preferences are also those of birds or any other animal. An attraction to fatty foods was helpful in our evolutionary history: more calories are produced by using fat as a fuel than by the use of proteins or carbohydrates. By being naturally attracted to fatty foods, we could store foods that were energy-rich which helped us survive hard times. Some birds are attracted to fatty foods, but certainly not all birds and not at all times of year.

All birds store fat, although not exactly in the way we do. In birds, fat is stored as a subcutaneous layer and some fat is stored within the muscles. Fat is rarely stored around the heart as is the case in mammals...the exception is that some birds in captivity, can become obese and very unhealthy, with fat that is stored around the heart. But, for wild birds, fat is THE fuel for migration. Many birds will dramatically increase their fat storage prior to migration. In some shorebirds, as much as 60% of the body's mass is fat as they prepare for migration. Rufous and Ruby-throated Hummingbirds double their weight in fat prior to migration, and fat is the fuel a hummingbird uses to survive the night. But fatty foods are not sought out by all birds: a hummingbird increases its intake of sugar in the hours before dusk. This sugar is converted to fat by the liver and the fat is slowly burned to survive the night while in torpor. Other birds also seek carbohydrate-rich foods, not fats directly.

An attraction to fats is certainly not a factor in a bird's consumption of mealworms. Mealworms do contain fat but they are not "full of fat," as stated in the article. The nutritional composition of a mealworm by one analysis is as follows:

Live mealworms: 62% moisture, 13% lipid (fat), 20% protein, 1.5% ash, and 3.1% carbohydrate.

Dried mealworms (moisture removed, so all other values will be higher): 5% moisture, 28% lipid, 53% protein, 4.1% ash, and 8.5% carbohydrate.

Despite appearing to be higher in fat, dried mealworms' fat percentage changes once moisture is restored, either within or before eaten by a bird.



Photos: Left: Live mealworms, the larval form; right: a Darkling Beetle, the mealworm adult

The article in question states that you should never feed mealworms to breeding birds because it will kill the babies and the parents won't know when to stop feeding them. **Mealworms will NOT kill the babies.** Adults feed a wide variety of wild food to their babies and they will certainly never overfeed them. It's a never-ending task to take care of a brood of young birds. A pair of House Wrens was counted making over 500 trips to the nest with food in just one day of feeding. At that rate, it's hard to overfeed!

There is the claim that fruit-eating birds will not get proper nutrition if they are fed mealworms instead of fruit, so birds like American Robins and Cedar Waxwings should only get very small quantities of mealworms.

Any bird that is strictly a fruit-eater will have no interest in mealworms so there is no worry about them. American Robins, however, are not strictly fruit eaters. Nearly 50% of a robin's diet is animal matter, mostly insects, earthworms and other invertebrates. They have even been reported eating such things as small snakes, lizards, and frogs, although these may be very unusual. What they eat depends on the time of year, habitat and what part of the country they are found in. Fruits are a predomi-

*Mealworm Truth...continued from page 12*Original Paper at: <https://eugene.wbu.com/mealworms-article>

nant food during the winter and insects and earthworms are more heavily consumed in spring and summer. Cedar Waxwings eat almost exclusively fruits during the winter. If presented with mealworms, they would have little interest in eating them then. During spring and summer, insects do play an important role in a waxwing's diet, however, and some mealworms may be taken by them at that time. However, waxwings are much more interested in flying insects. In general, all insects are not equally attractive to all insect-eating birds.

Unfortunately, this article continues with some very bad fallacies that I really must correct, as these statements show a complete lack of understanding about birds. The statement is made that feeding a lot of mealworms during the breeding season will "trick" the birds into having a second or third brood when the female is already "depleted." It is unclear what is meant by depleted, but the piece goes on to say that when the female is pregnant, the growing baby is hard on the mother's body, stating that much of the nutrition for the chick comes out of the mother's body. It then makes the incredible statement that birds having a third brood will not have the endurance to get to their wintering grounds.

There are so many misconceptions and falsehoods in this that it is hard to know where to start!

Let me begin with some very basic avian biology severely lacking in these statements. First, wild birds will always feed on the variety of foods they need. Mealworms may be consumed but never exclusively. The birds will get a balanced diet, so the risk of mealworms being less nutritious is of no concern.

So, her sentence: "Birds fed a lot of mealworms may be tricked into having a second or third brood when the females body is already too depleted..." is sheer fantasy with absolutely no basis in fact! During and after the breeding season, there are still plenty of insects in the environment that the birds feed upon. Why don't these insects "trick" the female into having too many broods? Why would mealworms cause this when the natural population of insects doesn't? The reason is that the birds cannot be tricked into having more broods! Many birds are single-brooded, like most hummingbirds and most neotropical migrants. Many non-migratory small birds are double-brooded and a few occasionally have a third brood. There is nothing you can do to change these behaviors. **Unusual and severely limiting conditions may sometimes cause a delay or nest failure, but**

feeding mealworms can never cause birds to have more broods than they are biologically set for. Period.

The author states that having a third brood means that the birds cannot reach their wintering grounds. More nonsense. Birds that do have third broods are non-migratory species. They have the time to start early, before neotropical migrants arrive. The arriving migratory species will not have a third brood. Most of them only have time to arrive, find territories, establish pair-bonds, breed and raise a single brood of young. There is no time to raise a second brood before returning to their non-breeding habitats and no attempt is ever made to do so. At the time they are finishing their first brood, there are still plenty of insects in the environment and this abundance of insects does not trigger multiple broods or bring about poor conditions for migration. Prior to migration, these birds' hormones have changed and their physiology is turning to storing the fat that will be the fuel for migration. The whole physiology of the body is shifting and the hormones that induce breeding behaviors and conditions have diminished and are no longer playing a significant role in the bird's activities. No amount of mealworms, or natural insects, can change this.

Such changes are not induced by food, in most cases, but by changes in day-length. A few species, like Pine Siskins, are triggered to breed by an abundance of food and may breed in many months of the year. But the trigger is the abundance of **natural** foods and in sufficient quantity to sustain entire populations for several months. Mealworms put out in your backyard could never provide enough food to trigger this behavior in such species. The birds exhibiting this kind of behavior are feeding on an abundance of conifer seeds, NOT mealworms.

The author states that, "...being pregnant and growing babies is hard work on a mother's body. Much of the nutrition for a growing baby comes out of a mother's body." Females that birth live young, placental mammals, some fish and some reptiles, get pregnant. Birds do NOT get pregnant. No birds give birth to live baby birds, they ALL lay external eggs. Does the author not understand about eggs?!? The growing baby chick does not grow in the mother's body nor take any form of nourishment from the mother while it grows and develops in the egg.

Prior to laying an egg, the female's body produces yolk material, which will become associated with the egg cell (the gamete, not

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the hard-shelled structure we refer to as an egg) before it is released from the ovary. If fertilized, over the next 24 hours, it will pass along the oviduct where albumen and other membranes are added and finally, a shell is produced around it just before it is laid. From that point on, all growth is within the egg and all nourishment comes from the yolk. The female has nothing to do with the growing chick other than to provide the warmth and protection needed for the growing chick to survive until hatching. Her body provides no nourishment, unlike a placental mammal. Calcium is taken from the mother's bones (primarily) but not for the growing chick. Calcium from the female's body is used to produce the egg shell. The female will replenish her supply of calcium through her diet. Additionally, after the chick(s) has hatched, the mother may eat some of the fecal droppings of the chicks. For the first few days after hatching, the chicks do not process all of the food well, so eating the droppings of her young can provide the female with some extra nutrition including some calcium. The growing chick takes nothing from the mother while it is in the egg.

The article then states that our yards don't provide sufficient insects to provide for many breeding birds. Many yards **do** have the necessary foods to sustain more than one nesting pair, even small yards. But birds establish territories and effectively prevent others from entering that territory, at least within a given species. But different species may breed quite successfully in the same yard. It would not be at all unusual for a pair of Black-capped Chickadees, a pair of Song Sparrows, a pair of California Scrub-Jays and a pair of Bushtits to all nest successfully in a small yard, assuming the right conditions of *habitat* exists for each of them. Foraging

competition would be minimal as each of these species forages differently and seeks different insects (and many seeds in the case of the Song Sparrow). If yards lack the food resources, why do so many species successfully raise young each year? In a suburban setting, one yard is not likely to be more productive than most neighboring yards. If our yards are so poor, where are the birds finding food?

The ridiculous claim is made that luring birds into your yard with mealworms will cause their young to die from being fed mealworms and not getting the other insects they need. But this will not happen. Birds cannot be "tricked" into an area by mealworms. Many different habitat and food characteristics are essential for birds to come into an area and start breeding. Providing mealworms will NOT override these other important factors.

Not all birds eat seeds. There are still many insectivores found throughout the winter and many insects and spiders persist through the winter. Foraging techniques differ for finding them in the winter but that food resource is still there. Consider Anna's Hummingbirds: they are now common in many parts of the Pacific Northwest at all times of the year. They will consume the nectar you provide in your feeders and they find other sources of sugar in nature, but sugar nectar cannot be their only food source, as they also require protein. Experimentally, hummingbirds can only live 10-12 days if their only food is nectar. Insects and spiders are essential as a protein source and there are plenty around for the hummingbirds to find and exist on, even if you can't see them. Big humans really aren't very good at noticing tiny insects on surfaces of plants!

(In our store bird walks, we will sometimes watch as a flock of Bushtits or other species flits through trees nearby, pausing to glean insects from the undersides of human-eye-level leaves. We will approach after they leave and our goal is to find as many teensy food items for a bird as we can.)

There is one potential danger that very recently become known about the consumption of mealworms. Some mealworms are now known to be hosts for some tapeworms. The eggs can be carried by the mealworm and hatch in a mammal's (including human) intestine where the tape worm can grow and flourish. This is not known to be a problem for wild birds. The only birds thus far known to be infected have been domestic poultry, not wild birds. These parasites have not been found on many insect farms. More work needs to be done but for now it appears the risks are very small and the risk to wild birds may be zero, or nearly so. So, unless you plan to consume a lot of mealworms (and human consumption is becoming more popular in Asia and parts of Europe), I wouldn't worry about this issue at all. It's highly unlikely that the tapeworm eggs could survive the process of drying the mealworms so the risk of tapeworms from dried mealworms is non-existent.

Mealworms should never be used as the only food source for birds but no responsible bird-feeding human does that; we all feed a variety of foods from season to season. Providing mealworms, whether dried or live, is a great and very, very safe way to attract birds into your yard. I encourage you to try them as an added treat to provide to the birds coming to your yard. They won't last long, especially live mealworms,

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but you will enjoy watching the many birds who love this food item.

We sincerely thank Ron Dudley for the use of his photo of a Loggerhead Shrike casting a pellet! Dan has long followed Ron's outstanding bird photography blog daily, and highly recommends his blog to all those interested in bird behaviors! Ron has the distinction of being the ONLY excellent source of songbirds casting pellets that Barbara Gleason could find! Thanks so much, Ron!

Ron's blog: [https://www.featheredphotography.com/](https://www.featheredphotography.com/blog/2012/02/12/shrikes-pellets-and-photographers-frustrations/)

The following post in Ron's blog is quite interesting about shrikes and their pellets, and we encourage our readers to learn more:

<https://www.featheredphotography.com/blog/2012/02/12/shrikes-pellets-and-photographers-frustrations/>

And here is another one about the interactions between a hummingbird and a wren, involving territoriality AND a pellet... enjoy!

<https://www.featheredphotography.com/blog/2019/06/19/house-wren-harrassed-by-a-hummingbird-and-throwing-a-pellet/>

Dan Gleason is a retired Biology Department faculty member from the University of Oregon. While serv-

ing on the faculty, he taught an ornithology course for seniors and graduate-level students in Biology. He is the author of *Birds! From the Inside Out* and *Looking For Yellowheads*, and has written numerous articles including a monthly article about birds in the local newspaper (Eugene Register-Guard) for more than 9 years. He has been a frequent guest speaker at Audubon Societies, Garden Clubs and other nature-oriented organizations and bird festivals for the past 30 years. In 2015, he and his wife Barbara, opened Wild Birds Unlimited in Eugene, Oregon. This shop sells high quality products and food for wild birds. A part of Dan's reason for opening this store was to continue providing educational material to the public about birds. The information is provided freely through written articles, direct conversation with people interested in birds and through lectures given in the store. (Because of Covid-19, these talks have been suspended. Once this is completely safe, these talks will resume.)

A note from *The Fledgling* Editor:

My Sincere thanks to **Dan and Barbara Gleason** for their generosity in sharing this paper, and providing the materials and permissions needed to include it in this newsletter.

Please check out their wonderful website:

<https://eugene.wbu.com/mealworms-article>

REMINDER! MOBS Educational materials! Take advantage of the materials

MOBS has to offer to help you share and encourage others in Bluebird and Cavity-nester Conservation. Contact Steve and Regina Garr (contact info on the front of this newsletter) for color handouts, and download the MOBS PowerPoint program from the MOBS website. *Our sincere thanks to Bluebird Network Telecommunications company for generously providing the funding for the MOBS Educational Brochures and Quick Reference Guides.*





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The Fledgling Winter 2021 Issue

- Transitioning from Winter to Spring—
and preparing for Summer.
- **One of *those* Winters in Missouri...**
Winter kill in nest boxes.
- **Upcoming Events**
- **Another great
member submission!**
- **MOBS Raffle Winners!!**
And a BIG thank you to everyone who
participated.

Feeding Mealworms
Thoughts and science
from a retired
ornithology professor

