

Oology Encore + Bonus Material with John Bates

Oologies Podcast

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[2021 Alie] Hey, what's up? It's 2021 and it's a lady from your mom's book club, the one who apologizes even when she brings cookies. Up top I want to tell you that this is an encore of an episode that went up in 2018, and it has a ton of never-before-heard bonus content and asides that I cut out from the previous release, so you have not heard a lot of this. I'm giving it another spin because many of you have never heard Oology and 'tis the season to scoop up a lot of discount Easter candy at the drugstore. And I'm working on a big episode for next week that's going to blow your minds, so I wanted to just take a little bit of a breather.

But here is eggs, alongside a seriously egregious – *egg*regious! (I'm so sorry, that wasn't even intentional!) – amount of asides. You may listen to these asides and say, "Boy howdy, that's a lot of asides, but I'm happy to have this info on pagan holidays and ostrich nests. Okay, let's dive in.

[2018 Alie] Oh heeey. Hey, hi! Hi, it's that lady from your mom's book club – Hi! – the one who apologizes even when she brings cookies, Alie Ward, back with another episode of *Oologies*. Oh man! I never knew I needed this episode.

We've had an episode about ornithology (birds), but now, we're gonna get to the heart of the matter. And by heart I mean butt, and by butt I mean cloaca. What is a cloaca? Well, as I've said before, it's kind of like the home button on an iPhone, like if Steve Jobs has designed an orifice; a multipurpose li'l boop. It's good for sensual adult times, egg laying, and poo. Today, we're going to be *cracking wise* about eggs. Oh, so many eggs! So many glorious eggs! What a wonder!

But first: this podcast would not exist without patrons on [Patreon.com/Oologies](https://patreon.com/Oologies). You can support for a dollar a month. Patrons get to hear what episodes are coming up next and submit questions for the ologists, and I say your name as right as my mouth possible can. Also, [OologiesMerch.com](https://ologiesmerch.com) has backpacks, caps, bikinis, shirts, totes, gifts, pins; all science themed. But, if money's tight because the world is falling apart and it's on FIRE, that's okay. Rating, subscribing, and reviewing keeps *Oologies* up in the charts where other people can see it and say, "What is this podcast that talks about slug dicks and why does this lady call herself my dad?"

I read all of your reviews. I'm upfront about it, alright? I'm like a concerned parent, reading the diary you left open on the counter. So to prove it, just like I do every week, I shout out one reviewer, and this week I would like to thank Beyonce23706 (maybe that's Beyoncé? Perhaps it's a different Beyoncé), who says:

This podcast makes me want to make the world a better place. I love hearing all of these people who I would normally think of as existing on another plane, and finding out that they're just people, and I could be one of them too!

I read that earlier today and literally started crying, so thank you, Beyoncé, for that!

So, let's get the *shell* back to this *egg*cellent episode, shall we? (By the way, THAT is why I call myself your Dad.) Okay, so why is it called Oology? Why are there so many god dang Os in this word? It comes from... one guess! Yes, the Greek word *oion* meaning egg, and it's a branch of ornithology that deals with eggs. I want to think the "oo" in Oology is because them Os look like li'l eggies! But that's not true.

Okay, so this interview - what a treat! I was in Chicago for a few days and I reached out to the wonderland that is the Field Museum, via The Brain Scoop's Emily Graslie (hey gurl!), and they hooked me uuuuuup. Not only did they give me a quiet room to record the Epidemiology episode with the Erins of *This Podcast Will Kill You*, BUT ALSO, they were like, "Yo, we got an egg dude for you."

So, Kate Golembiewski, I owe you, like, ten puppies. Kate met me at the Field and she walked me through the ornithology lab:

Alie: Whoa, whoa! Hiiii, so many jars!

Up some steps:

Alie: You know what I didn't realize also, is that this museum is so big that our commute from one office to the other, that's a good 10-minute commute! I should have left a trail of breadcrumbs.

To the office of an *eggs*-pert in bird babies. A kind-faced bespectacled gentleman with thick salt-and-pepper hair and a desk piled with egg books and field notes. It was a Friday afternoon at 4pm and I hated to keep him from his weekend, so some of the questions and answers are super rapid-fire. But then, we had such a jolly time hanging out that afterwards he offered to give me a tour of the egg bunker, and hell yes I took him up on that.

So, throughout the interview are the audio notes from that tour as we continued to gab in the stacks. This episode is a feast of facts about speckly eggs, and outlaw birders, and falcon mysteries, and vaults of delicate treasures, and can you eat cookie dough? And modern research done with old artifacts, and there's some Easter bullshit, and chicken hatching, even snake trivia. It's got it all! So buckle up, alright?

Let's settle our feathers and ready ourselves for the ornithological treasures of Oologist, Dr. John Bates.

Interview in John's office

Alie Ward: Hi, nice to meet you! Thank you for talking about eggs with me.

Dr. John Bates: Nice to meet you.

Alie: Are you technically an oologist?

John: No, I am not.

Aside: [record scratch] What?! Not an oologist?! He literally edited *The Book of Eggs*. It's called, *The Book of Eggs* and his name is on the cover. Not an oologist?? He studies bird eggs! Okay, [sighs] I gotta breathe... More on this situation in a minute. But he is definitely an evolutionary biologist/ornithologist, and officially an Associate Curator of Birds *and* head of the Life Sciences Division at the Field Museum in Chicago.

Alie: What do you study about birds? Do you study particular eggs of different species? Feathers? Beaks? Like, what's your bag?

John: Well, I'm a curator, and we have one of the world's greatest collections of birds here in the museum, and so one of the things I've been interested in over the years is all aspects of avian biology. The egg part actually came about because we have an egg collection and I feel like it's my responsibility to know something about eggs.

Aside: So, after the interview at his desk, John took me down a labyrinth into the bowels of the museum, just stuffed with millions of scientific artifacts. For real, actually millions of artifacts. What you see on displays at museums is a laughably small representation of their actual shit. They have it in files, and drawers, and boxes behind the scenes. So, behind these scenes, we came upon a room labeled 'Egg Collection', to which John had the keys.

Tour audio

[door opens]

Alie: Woooooww!

John: So, this is our egg collection.

Alie: Aaahh!! What! This looks like a bank bunker! They really look like you're breaking into a bank vault.

John: They do, yeah.

Alie: Oh my god... So how many specimens in this room?

John: So, probably around 100,000 eggs

Alie: [*gasps in awe*] Wooooowww.

Interview in John's office

Alie: Now, why do you say you're not an oologist even though you study bird eggs?

John: Yeah, that's because... basically I don't know if you could find anybody who would describe themselves as an oologist anymore. It's an extinct ology at some level, which is too bad. That's actually one of the things that some colleagues and I are interested in. We're actually working on a paper right now trying to encourage people to remember. And that is that there are these incredible collections of eggs around the world and a lot of times they're pretty underutilized or people tend to forget they're there.

So, oology was really popular in the 1880s to the 1920s or so, and then it died out. Some of that was because people were a little concerned that there might be issues with respect to collecting eggs, in terms of affecting the population biology of birds and things. And so, it kind of fell out of favor with a lot of people.

Aside: Soooo, oology can mean the study of eggs, but it can also refer to the hobby of collecting wild bird eggs, also called *egging*. Now, at some point, these amateur egg scholars stopped egging because it became illegal. People were like, "Well, you *are* stealing babies." Now, Wikipedia says, "Despite this, some of those who engage in egg collecting show considerable recidivism." (That's legal speak for doing bad shit again, like, chasing the dragon egg.) Wikipedia continues:

One, Colin Watson, was convicted six times before he fell to his death in 2006, while attempting to climb to a nest high up in a tree. Another individual has been convicted nine times and imprisoned twice. And a third has been convicted 51 times, imprisoned four times, and barred from entering Scotland during the breeding season.

People are addicted to egg collecting!

Also, one historical amateur ornithologist, Charles Bendire – whose stash of 8,000 formed the base of the Smithsonian's egg collection – climbed a tree for some hobbyist egg thievery and was rightfully (if you ask me) shot at and scared away, but escaped climbing down the

tree with a raptor egg in his mouth. And the egg was so big that he had to (and was willing to, rather) have his teeth broken to get it out of his mouth. Like a cloaca face. So, these were the oologists of yore. Perhaps that's why the term fell out of favor.

Interview in John's office

John: But then the other thing that happened was the advent of things like cameras, and suddenly you could make an argument that you didn't need the specimen per se if you could take a picture of the eggs.

Alie: Do you think that if you're not out actively collecting and studying eggs and you're not an oologist?

John: Well, I like to describe it, in an interesting way I think, from the perspective of humans, that on some level it's like pediatrics. Here's this field where people study children, and this is a field where people studied eggs, but it's a specialization within pediatrics, right? They studied a specific thing, and I think that in part it was just because collecting eggs literally fell out of favor and so the term "oology" actually fell by the wayside at some point.

Alie: I think it's time to resurrect it.

John: That's actually... There's a lot of science that can be done with eggs.

Alie: Yeah! So, tell me about the collection you have, and what do you like about eggs? Because I feel like you have to be into them in order to study them. I think aptitude is backed by passion, I'm guessing. So, what is it about birds and bird eggs that you love or that you're drawn to?

John: So what I'd say, eggs themselves are just beautiful things in nature, for one thing, but when you look at these collections you start realizing that they're incredibly valuable pieces of our understanding of early natural history. One of the things I always like to say to people is that if you go back to our collections of bird specimens from the 1880s, a lot of times they have very little information on them.

But with the egg collections, it's very common for them to have these detailed nest cards, which describe exactly when the person found the nest, how many eggs were in it, what kind of tree it was in, very detailed locality information. And so, these guys were actually collecting really excellent natural history data, probably 10 to 20 to 30 years earlier than a lot of the specimen collectors were. It's incredible data. As a matter of fact, one of the things we're trying to do right now is work on various projects where we can use these data to look at what's going on today.

Aside: So it's kind of like, "Ehhh, thank you for nest plundering back then, you monocled derelicts, but yeah, no, we don't do that now. That's not a pastime. Let's just play video games or scroll through pictures of other peoples' vacations on a tiny screen." But the *dates* in all of those amateur egg collections are very helpful.

John: So, for instance, we can look at nest laying dates for birds in the Midwest and ask the question... If we have data from modern birds on when they were laying (and this is based on field observations from some of my colleagues), we can look at individual species and ask the question, are bird populations in the Chicago region laying their eggs at different times than they were historically? And it looks like the dates of laying have advanced, actually, which is consistent with some of the potential issues that you'd expect due to climate change.

Alie: Right.

Aside: Climate change IS a biggie, as are the effects of pesticides and pollutants. So, one huuuuuge detective story is often cited when the topic of vintage eggs comes up:

Tour audio

John: When I show this to people and I talk about why we have these collections, one of my favorite examples is peregrine falcon eggs. So, these were collected in the 1890s in North Dakota.

Alie: Oh my god, wow!

John: In the 1960s, along with ospreys and bald eagles, peregrine falcons had their populations plummet, and peregrine falcons actually went extinct in eastern North America. What was going on is that they weren't having any reproductive success, and it was because every time females laid eggs, they would start sitting on them to incubate them, and they would crack. And scientists thought that this pesticide, DDT, was causing eggshell thinning.

One of the big pieces of evidence that led them to ban DDT in the US was this study by these guys named Hickey and Anderson, where they went in and they measured pre-DDT era eggshell thickness in these birds, compared with post-1960 (during the DDT era) eggshell thickness, and they were able to show that they were demonstrably thinner in a bunch of the key areas.

It was a great scientific design that was possible because they had access to these collections, and what I always like to point out is that this guy that collected these things (Forsyth, in 1917) had no idea that 40-50 years later his eggs would be used for a study like that.

Alie: Right. It's so cool to see current research being done on specimens that have been collected 100 years ago.

John: Exactly.

Aside: So just think, some of the citizen science you do today might help future generations to study, like, which plants existed before the robots that we download our consciousness into took over the Earth and mined all the gold to make toilets and then darkened the sky with clean coal emissions... is that too dark? [*Gilly from SNL: "Sorry"*]

Alie: When they would collect the eggs, would they blow the eggs out or would they just rot? What was happening?

John: Yes, they would drill a little hole in them. It was a real art, and they were really good at it! They would carefully inject a little bit of air, and once you do that you can blow the contents out of a very small hole and you're left with the eggshell.

Alie: Can you explain to me how an egg is formed? Because it is kinda odd to be like, "Hi, I'm a bird, I'm soft, I'm fluffy..." and then BOINK, there's this hard thing that comes out of your cloaca - what *is* it?

John: Basically, the female has this developing ovum in her oviduct, and it goes down, and there are glands that produce the shell material, and it gradually rotates and forms, and you get the production of this perfectly layered, hard-and-yet-thin thing, covering that developing embryo in an incredible way. And then there are all kinds of interesting things that happen after that, with respect to making the eggs colorful, or spotted, or things like that.

Alie: Yeah, so is it like layers on a jawbreaker, like layer after layer of calcium? Or is it like one layer of shell that happens at once?

John: My understanding of it is that it's a layer thing, and as they're going down the oviduct, the shell gland is actually layering on that material so that when it comes out it's a perfectly formed egg.

Alie: And then, where is the airbrushing station in the oviduct? Like, where are they putting on the speckles and, like, the robin egg blue colors?

John: It's done as it's passing along through the cloaca and in the oviduct. There are these melanin-producing cells that will actually make the color. But some of the aspects of that are still debated by scientists; we don't know how some colors on certain types of eggs are made.

Alie: I understand that... Like, we're surrounded by these beautiful posters of eggs, and I understand eggs that look like granite. Boom. "Is it an egg or a rock? I don't know, I can't tell. I'm not going to eat it." I get it. But a bright blue robin's egg in a green tree... What's happening there? That seems so conspicuous.

John: Yeah. So, quick answer: we don't know. But if I showed you the eggs of a tinamous, which are neotropical birds, a bunch of species that look like little chickens that run around in the forest or open country, and they lay these incredibly enameled eggs that can be anywhere from blue to brown to green, and they're just incredibly enameled. And we don't know why they do that. One hypothesis, which is kind of crazy, is that they want it to look so weird that no predator would look at that and go, "Yeah, that's something we should eat."

Alie: [*laughs*] They want them to look like a weird toy or a piece of ceramic or something?

John: Yeah, because they literally don't look like anything you would find in nature.

Aside: So, down in the O-O-vault, John showed me another egg that looked like a prop. Like, no way did a bird butt make this:

Tour audio

Alie: Oh my god, are you kiiiiidding meee?

John: These are these common murre eggs. This is a cliff nester. You can see, these are from Ireland and they would have been laid by different females, such that the female could actually individually recognize each egg. And you can see these things, like all these little squiggles, come from the egg twisting as it's coming down the oviduct.

Alie: It looks like you just took a Sharpie or marker to them. It looks like you let your four-year-old nephew color them in, you know what I mean? Or Jackson Pollock. Oh my god, they're gorgeous though!

John: You can see this one sat for a while

Alie: Oh, inside of the oviduct? So it gets more of that speckling from all of those cells?

John: Exactly.

Alie: I never knew that's how it happened! I mean, it's so crazy to think of it twisting and turning and making those marks.

Aside: Just squiggling down the bird-butt canal, getting a streaky paint job on the way? It's so delicately, magically gross and beautiful.

Interview in John's office

Alie: What about egg shape? Why are they the shape that they are?

John: So that's an interesting question that's been studied and published on fairly recently, and one of the hypotheses is that it's related to body shape at some point. Eggs have a fairly defined shape for the most part, but there are really interesting aspects of certain eggs. For instance, eggs of some of the birds that breed on cliffs, like common murrelets, have a thick base and then a long, pointed tip, and one of the hypotheses is that they've evolved that way because they're on a cliff face, and if you roll that egg on a cliff face it'll just roll in a tight little circle because of its shape. Now, some other people have come along and said no, that's not what's going on, but that's a plausible explanation for that egg shape.

Alie: And do you eat eggs?

John: I do eat eggs.

Alie: Oh okay. So you don't have a situation where you're like, "Oh I can't do it!"?

John: Yeah, no.

Alie: Is it bad for us to eat chicken eggs?

John: So, I always like to say that my pediatrician used to flip back and forth every year that I went to him, which drove my mom crazy. Like, he would say, "Eggs are good for your son." Good. Next year, "Eggs are bad for you."

Aside: Sidenote; I was like, "Yeah, what's up with eggs having a big reputation?" So, in 1968 the American Heart Association advised people not to have more than three egg yolks per week. It's like, "Eggs are canceled! Unfollow eggs on Twitter. Do not invite them to breakfast." And then, years later, some news came out that was like, "Naaah, eggs are fine." Then, in the last few years, this new Cholesterol Kills campaign came out by an organization called The Truth About Eggs. BUT! That turns out to be a vegan advocacy group.

So, I turned to official science papers for some sanity. There was one about how eggs have gotten such a bad rap, and seriously, they are fine. I was like [*takes a quick, deep breath of relief*] "Okay, cool. Science paper, I trust you." AND THEN I scrolled down to the author bio of this science paper, and he worked for the egg industry!

Good god, eggs! How is your PR more complicated than the JFK assassination? This is like if the mob specialized in brunch scrambles. I cannot keep track! So, I guess if you are at risk for heart disease, consult your physician, read some papers, and pay attention to who's writing the papers. I may be your weird uncle, but I am no doctor. Well, John is technically a doctor but:

John: I'm not an MD.

Aside: Not that you'd be making a bunch of omelets now (sorry) but if you were, you'd have to break some eggs. BUT, what if it's a museum egg, and you're an oologist?

Tour audio

Alie: Have you ever broken an egg, and been like, "Oh, shit!"?

John: Well, the quick answer is no, but...

Aside: Back in the cool egg dungeon, John withdraws a drawer slowly, and he tells me a tale of a thousand cringes.

John: One of the greatest curators of birds at the field museum, a guy named Mel Traylor, apparently, at one point, pulled this drawer too far out and dropped it. [*laughs*]

And so, even the greatest people can make mistakes! Now, the truth of the matter is, it looks bad, but you're not really losing the information.

Alie: You're not losing the data, but... still...

John: No, but it's still just... I can't even imagine what it was like the day that that happened.

Alie: What kind of words do you think came out of his mouth?

John: I... He was an incredible gentleman, so I bet he swore quite a bit!

Alie: Oh my god, that is just devastating!

John: [*chuckles*] Yeah.

Interview in John's office

Alie: What has been the rarest or most beautiful specimen that you've seen?

John: I think some of the coolest eggs in the world belonged to a bird called the guira cuckoo from South America. They're these incredible eggs that they lay in big numbers; they're cooperative breeders. And I'm not exactly sure, some of their relatives actually have multiple females on the same territory, and they'll actually throw eggs out, on average, but they'll end up with a mixed nest of multiple eggs of different females.

These guys will have up to 10 or 12 eggs in the nest, and they start off with this white powder around them, but it's a blue egg, and over time the blue wears off in this kind of patchwork fashion that just gives a really beautiful color to them.

Alie: Ooooh, so they have almost like an opposite patina effect? Oh wow.

John: Exactly.

Aside: Later, on the tour, I got a chance to see these bad boys and they're this lovely minty aqua, like a tourmaline blue, with white patterns overlaid, and it was a gasp-a-thon:

Tour audio

Alie: They're gorgeous! I mean, they look like ceramic. We just don't ever have an opportunity to see a lot of these, you know? Ever! Because when are you going to come across a cliff nest, or you know, something that's 30 feet off the ground, hidden behind leaves?

Aside: So that guira cuckoo with the gorgeous eggs is sneaky and she leaves them in nests that are not hers! A bunch of cuckoo birds do this. And then their babies hatch and then they bump out the other babies. The parents just don't seem to notice that all of their babies are gone, and they now have one giant baby that does not look like them. Such gossip. And this bamboozlery happens with other species, of course.

John: These are anis, which are these black birds from the tropics, which are cuckoo relatives. These are the ones that have these nests that multiple females in the group will go lay in.

Alie: Like daycare?

John: Yeah. With the caveat being that apparently there's an older female that'll come along and throw most of the eggs out over time and then lay most of hers in there.

Alie: Oh my god! What a bitch!

John: Yeah.

Interview in John's office

Alie: Are there any eggs that you know of that are so valuable, monetarily wise? Are there any that are, like, under glass?

John: Well, if I told you...

Alie: *[laughs]* That's true, you would have to kill me.

John: No. Well actually, we have a plaster cast downstairs of an elephant bird from Madagascar, which is a bird that was one of these giant flightless things. It was living in Madagascar up until the time the first humans got there. The beaches of Madagascar, in some places, are littered with small pieces of the elephant bird eggshell, and there are a few elephant bird eggs that have been found whole, and a lot of those are in museums. My understanding is those are worth sometimes upwards of \$30,000 to \$50,000.

Aside: Okay, so that price? Checks out. The elephant bird went extinct somewhere between the 1300s and the 1800s. Nobody knows! But it was probably because of humans. I think we all pretty much know that. Now, bigger than a basketball, these huge, foot-long eggs have sold at auction for more than \$100,000, which is pretty *eggspensive!* That's a lot of cash to *shell* out. *[chuckling at self]* Okay, I'm going to stop cracking these *yolks*. *[cheesy laugh]* Please don't reject me.

These elephant bird eggs, there's a list on Wikipedia of the different museums that have them in collections, and there are less than 40 intact specimens at institutions around the world. But, recently added to the list just a few months ago, the Buffalo Museum of Science. For years they thought this precious behemoth was just, like, a plaster model. And then they were like, "You know what? Let's get it x-rayed." Turns out, it's the real deal. They were like, "Oooohh shit!! Oh my god! We're rich!! ... if we decide to sell it. But mostly we're going to hang onto it because it's cool for science and stuff." I think that's what they said.

Alie: *[softly]* That's a lot of money for an egg.

John: But think of how many omelets those things would have made.

Alie: *[shouting to the sky]* So many omelets! Which is probably why they're extinct!

John: Exactly right.

Alie: What's the biggest egg you have ever cracked? I once tried to eat an emu egg and it required a hacksaw.

John: Was it any good?

Alie: It was very rich. It was huge. It was overwhelming. But we whipped it up and made an omelet, and it was the most buttery and kinda fatty-tasting one, but it was huge. It looked like a giant avocado.

John: Yeah, I have to admit that most of my time has been spent with chicken eggs, in terms of actually cooking and eating, so... I'm trying to think if I have ever actually... I don't think I ever have actually eaten another bird's egg. Not even a duck or, yeah...

Alie: Really?? I once had devilled quail eggs, which was weird. I just felt like a giant because they're so little. But how do you take your eggs?

John: Over easy.

Alie: So, does that mean runny yolk?

John: Yeah.

Alie: Why does that gross me out? But it doesn't gross other people out? Should I be grossed out?

John: Well it's supposed to soak into what's left on the plate, like if you've got potatoes on the plate and it makes the potatoes taste better.

Alie: I don't know why. There's something that grosses me out about it.

Aside: Another thing that grosses people out: the chalaza, [ph: kah-lay-zuh] those two coily white threads attached to the yolk. [*drawn out with vocal fry; disgusted:*] What arrrrrrrre theeeeyyyyy?

Oh, nothing much, just ropes of protein... They're actually markers of a fresh egg, since they disappear as it ages. Why are they there, like tiny, slimy party streamers? Well, they suspend the yolk in the middle of the egg. Kind of like the Slingshot ride at the county fair. But depending on how you feel about egg protein squiggles and carnival rides, one may have more screaming than the other. [*rollercoaster noises, screaming... then a comical BOI-OI-OI-OING of a spring*]

Also, sidenote: oh my god. I just went down a hole watching a compilation of GoPro footage of couples on the Slingshot ride, and it was horrifying and so, so amusing. And I only know from the Gelotology episode that it's funny because we know everyone is safe in the end. But my god, watching adults screaming for their moms on carnival rides is somethin' else. Wow. Oh my god. Also, never, ever going on that. Ever. Okay, back to egg boogers.

Alie: I need to get over it because other people seem to love it. But for some reason the yolk... The yolk is with the chick eats inside the egg. Correct? Or is the yolk the chick?

John: The yolk is what it's going to eat.

Alie: Okay, so that would be the baby chick's food... so I should be ok with eating that right? Right.

John: Except, of course, that's the stuff that my pediatrician was always worried about every other year.

Alie: The cholesterol and stuff.

John: Yeah.

Alie: When you're cracking hard-boiled eggs, do you have a better strategy because you understand the mechanics and the anatomy of eggs?

John: No. That's one of the things that you just go for. I think it's a satisfying thing because in the end you have something solid in your hand that you can eat.

Aside: So if you're like, "I'm a grown-ass person and I can't boil eggs right," well, number one, why are you reciting passages from my diary? And two, I just looked up some tips. And apparently, here are some pointers, according to French chef Jacques Pépin.

Take a thumbtack if you've got one, puncture the egg in the round butt-end, right? And then gently boil them, not too high, for ten minutes. Drain. You kind of, very gingerly crack the shells but keep them on. Then submerge in an ice bath for 15 minutes.

If you still think that you screwed up because the shells stick to the egg, well, whoo! Boy howdy. Hot tip from old Dad here: The older eggs peel better! Fresh eggs, terrible at peeling. This has nothing to do with your performance as an egg boiler. This is all about the shell being porous and the egg white, also called the albumen, getting less acidic. Also, egg white will shrink with time, making the whole thing easier to peel. That also means the little air pocket at the butt of an egg gets larger as it ages, so fresh eggs will sink, older ones will float.

So, boiling an egg, once left only to wizards. You now hold the power in your hands.

John: I think actually, cracking raw eggs is more of an artistic technique that I've never fully developed.

Alie: I know, the people that can do one in each hand...

John: Yeah, those people. Like, how do you learn that?

Alie: Masters. They should be oologists, to be honest. They need to take up the term as well.

And now, how many eggs do you guys have at the Field Museum in collections?

John: So, the actual number is probably on the order of about 100,000.

Alie: Oh my god!

John: But the interesting thing about eggs, in collections like this, is that it's not the number of eggs individually, but the number of sets of eggs. So, we have about 20,000 sets of eggs, which means that the eggs laid by a given female at a given time. There's what's called the clutch size, which is how many eggs they've laid for that nest. And that's actually a truly interesting thing about avian biology because there's lots of variation. So, we were talking about those elephant birds; clutch size of elephant birds was two, which is, like you said, probably why there are no elephant birds left.

If you think about it, ostriches are another big flightless bird, and multiple females lay in the same nest, but there'll be upwards of 20 eggs in the nest because each female lays 10 to 11, and they're basically just hedging their bets with respect to producing their young because a lot of them are going to get picked off by predators over time.

Aside: Quick aside. What does an ostrich nest look like? I bet it's like an elaborately woven Papasan chair. Just a swirl of delicate wicker holding all these eggy treasures.

I looked it up and... What?? It's... It's just a sloppy pile of eggs on the ground. And a communal pile, at that! There's no weaving. There's no mud structure. No bird-spun basket. It's just... It is the laziest shit you have ever seen. Like if you and four of your housemates folded your athletic socks into balls and then tossed them all in the middle of the room. Only those large socks were your children! And your roommate's ass was incubating them while you're out drinkin' margaritas from a birdbath.

Ostriches? All the other birds look up to you because you are literally nine feet tall. Can you get it together? Okay.

So how do they lay them?

Alie: And now, they also have super thick shells because they have to drop, like, 12 feet from the ostriches' cloaca to the ground. Not quite 12 feet, but you know what I mean?

John: No, I'll bet the ostrich actually lays them sitting down for the most part. But they are really thick, and they're used by bushmen of the Kalahari to store water in.

Alie: Oh my gosh, what a cool purse. I mean, talking about a clutch, that would be quite an evening clutch. That's what they call little evening handbags. You'd be like, "Ta daaa, it's an egg!"

John: I'd be willing to bet that's been done.

Aside: Just FYI, yes, it has been done. Etsy, Pinterest, eBay, all just brimming with ostrich egg purses. Usually starting around several thousand dollars, but I did find one woman in

Hemet, California, who has a side hustle called EggBags.com. She makes them for \$350, roughly, because she's just really drawn to the art of egg décor, it seems.

So if you wanted to get yourself something very ornately fancy just to, like, toss in some ChapSticks, a granola bar, the keys to your rental Hyundai, egg purses are available. You know what? Be that person! Why not? We're only here for so long.

Alie: Is there any flimflam about eggs that you'd like to debunk? Any myths about eggs that you're like, "That is not how it is"?

John: [*thoughtfully*] Myths about eggs....

Alie: That bunnies don't lay them, despite Easter...

John: No, they don't; that's absolutely true.

Alie: Do you love springtime because of the egg imagery? Or are you like, "Come on, guys"?

John: No, because it gets really weird because of the bunny aspect of it, and I think that confuses the biology. I think Easter egg hunting is great. I think Easter egg dying is great. The whole bunny aspect of it really gets messed up.

Alie: Right. [*laughs*]

John: I don't know how that happened.

Aside: I'm going to tell you right now, to your faces, how it happened. Well, it's debated, but some historians think Easter came from the Germanic mythological goddess of springtime, Ēostre, who may have healed a wounded bird that she found in the woods by changing it into a bunny. And then the bunny was like, "Dude, thank you," and laid her an egg because the bunny was like, "I still have a bird butt, sis."

So, modern holiday traditions for Easter have roots in the Jewish Passover holiday alongside some sprinkles of pagan fun for the spring equinox. Which then made me wonder, "Why is Easter such a floater of a holiday?" I never know what it is! And in Western Christianity it always falls on – You ready for this? – the Sunday between March 22nd and April 25th, typically the first Sunday after the first full moon occurring on or after the spring equinox. Whatever. You have a Google calendar. We can all use it.

Anyway, bunnies dropping eggs brings us to [*Aussie accent*] *deown undah* where rabbits are, I think, invasive. And so they celebrate with Easter Bilbies, which is like a shrew-faced marsupial I want to pet on the head.

Alie: But how do you feel about platypi and mammals that lay...

John: Oh see, that's cool because they're just trying to be birds!

Alie: Right! Well, how did that even come about?

John: That's a good question. From an evolutionary standpoint it would be, potentially, a retained characteristic from their ancestry with reptiles.

Alie: And now, reptiles, were they the OG when it comes to egg laying? Because birds, reptiles... similar evolutionary pathway? Dinosaurs?

John: I mean, birds are dinosaurs.

Alie: Yeah, birds are dinosaurs!

John: So, we're looking at just... I think birds are just better dinosaurs.

Alie: It's funny because for so long it was like, "Dinosaurs are extinct," and they're like, "No they're not, there's a pigeon!" Done. Boom. Also, where do pigeons have nests?

John: They nest on little ledges and stuff. But that's a really great observation, because as many pigeons as there are in the city of Chicago, I almost never see a nest. And the other thing is that this group of birds, the Columbidae, the family they belong to, they lay clutches of two eggs. That's the total number. So, you would think that if you were laying two eggs on a ledge, any predator could come down and eat those things. And they're not particularly tough birds, so how are there so many pigeons?

Alie: I don't know! I have a theory that maybe they just asexually bud, and a feather falls off, and then a whole 'nother pigeon sprouts around it.

John: The only thing I would say that argues against that, is that I could show you pigeon eggs in our collection, so we know they do it.

Alie: Dang it. Once, I lived in an apartment building and a pigeon got inside. I did see a pigeon build a nest inside, on the carpet, and I told my landlords. I was like, "Yo, there's a pigeon, like, inside; like on the carpet," and they're like, "Mmm... leave it alone." And I was like, "What about bird mites? I feel like we need to worry about that. Like, can we scoot it?" So I did see one pigeon nest once but it was, like, one foot away from my door, inside on a carpet, and that it was just all kinds of wrong.

John: And did you see any pigeon mites?

Alie: No, but I think I moved before. The last thing I needed was bird cooties.

Aside: In case you think I'm five and just slandering birds, bird cooties are an actual thing, I promise. World War I soldiers, they took the Malay word for 'lice', which was *kutu*, and they meshed with the species coot, thought to be real dirty birds. So bird mites are a real thing and they can infect a house if you have, say, pigeons in the attic. They leave the nest and then the mites go downstairs to peek in the fridge for a snack, but instead of the fridge, it's your body. You are the snack.

Now, I've known two separate couples who have had bird mite infestations. One of them, a long-time friend, and it truly was one of the worst things she's ever been through. And she was in a body cast during puberty, you guys! Now, the other couple said they would rather have been haunted by a dozen poltergeists than contend with invisible biting things. So if you see a pigeon in your house, point to the door, or a window because they can fly.

John: You could do a whole 'nother ology on parasitology.

Alie: Because birds have mites.

John: Oh they do! We actually go into the field now and do an active job of trying to collect them because they're coevolving with the birds, essentially. So there's some really interesting questions you can ask with mites.

Alie: Do you get a lot of gifts that have eggs on them? Do people say, "I saw this and I thought of you"?

John: I do, because we did a book of eggs, and so people kind of know that I've worked... yeah.

Alie: How many books about eggs do you own in reference?

John: So, I benefit by being in a place where our bird library is right down the hall, and that means I don't have to buy as many books on eggs. I can just go down and surreptitiously grab them

off the shelf and check them out. And then the librarians have to come track me down to get them back.

Alie: You're not too far though. And I mean, who's going to make better use of a book about eggs than you?

John: Well that's my argument, but when somebody else wants it they need to be able to find me.

Alie: Did you ever have to do the thing in high school where they gave you an egg and they're like, "Don't break it, this is what parenthood is like." Did they ever make you do that?

John: No, I never did that.

Alie: I think they used to do that to scare teenagers away from becoming parents too early. They'd be like, "You have to take care of this egg for a week and if you break it you fail," or whatever.

Aside: I just looked this up, and in some schools now they give you a ten-pound sack of flour because it's similar, I guess, to carrying around an actual baby, if the baby were perfectly still, and silent, and only emitted soft puffs of edible, powdered excretions.

Other programs, since this is not 1832, will hook you up with a screaming, peeing, infant doll to contend with. Just all as a lesson to say, "Hey, kids. We know having intercourse with bae is on fleek, and you want to YOLO, but consider some bomb-ass protection so you don't become a teen parent who has to carry around a small, alive, screaming person with your face."

Alie: I feel like taking care of an unfertilized chicken egg is a lot easier than an infant. But what do I know?

John: Now that you mention it, the one thing I remember like that was at day camp and doing egg tosses.

Alie: Oh, right!

John: I was always one of those kids that didn't want to break the egg. I did not want to do it. Some kids didn't care. I did not want to break the egg.

Alie: You had an early appreciation! Now, if you bought a fertilized chicken egg (like from Whole Foods because you believe for some reason fertilized chicken eggs were better), could you take it home, put it on a heating blanket, and have some chicks in a couple of weeks?

John: Good question... And I wouldn't want to find out actually, to be honest with you.

Alie: Yeah, what are you gonna do with those chickens?

John: Yeah, exactly. And I wouldn't buy fertilized chicken eggs. *[laughs]*

Alie: What is the difference of when you're eating an egg, being fertilized or not?

John: It could be taste or something. But again, I don't have any intention of finding out anytime soon.

Aside: I looked this up and apparently, you CAN hatch chickens from fertilized eggs from like, Trader Joes, provided they're pretty fresh and actually fertilized.

So how can you tell? Let's get into some super quick egg anatomy. So the egg white, or albumen, is mostly water and some protein. It serves to protect and feed the chick. Now, the yolk is higher in protein and fat, and it really nourishes the growing baby bird. The color of the yolk can really vary depending on what a bird has been eating. So, grain diets probably

lead to lighter yolks, but backyard hens munchin' on table scraps and carrot peelings might have, like, bright orange yolks.

We already learned that the chalaza are those springy, protein slingshot rides that keep it all stable inside. To see if a yolk is fertilized... you have to break the egg. So, you get a whole carton and crack a few, and then you'll know if the rest are, like, down to hatch. Of the ones you test crack, look for a white spot on the yolk. If it's small and round, that's called a blastodisc, and that is not, in fact, fertilized. That is a dud.

If the white spot on the yolk is more of a bullseye pattern, then that is a blastoderm and the start of a chicken! So no, do not crack the eggs of the ones you want to hatch, just in case that was unclear. You just want to test a few in the carton, shed a tiny tear, and eat them, incubate the others.

Alie: Have you heard of balut?

Aside: Hi, sorry, me again. Just another quick, necessary aside. So, balut. What is it? Southeast Asian snack, often consumed with beer. It consists of a boiled duck egg. What's the big deal? Oh, also the duck egg was fertile, and the baby duck has been developing for 2-3 weeks and has, like, bones and a beak and stuff. Just all boiled and eaten.

But a reminder: lobster was once served as prison food because the idea of eating a sea cockroach was considered disgusting, and punishment. And I don't even know what's in nacho cheese, but I could eat it all day long.

And balut apparently has its roots in luxury, too, and I read that it is *the* street food in the Philippines at night. It's served warm, it has kind of an unctuous, brothy liquid on top, and the yolk is said to be creamy like a custard. I asked a listener who's had it and they say it's not too crunchy. Also, you don't have to eat the crunchy bits.

But it seems like every culture has its celebrated foods that are, maybe, difficult conceptually, from haggis to my Italian relatives feasting on pig feet, and it's all just a matter of familiarity and perspective. If you offered many an American an intestine stuffed with frappéd pig buttocks, they might say, "... nuh thank you." But: ZING! That's what hot dogs are.

I had a really great and illuminating conversation with one listener named Jackie in Boston who reminded me that our cavalier food fears could sow real and harmful xenophobia, and also our Asian American friends know this all too well right now. So, a friendly reminder from Jackie to try new foods and to keep your brain and your hearts wide open.

And to all the Asian Ologites, we love you, and we see you, and it's on all of us to stand up for each other and protect each other from the effects of ignorance. To quote the wonderful Dr. Merlin Tuttle of the Chiropterology episode, "People fear most what they understand the least."

Now, if you have ever eaten a fertilized egg, I will say, from the grocery store, you've also eaten balut. Just very, very under-ripe, if you will.

Alie: I have some questions from listeners, can I ask you?

John: Yes, you can.

Alie: Okay. Uhm... Some of them are from my dad,

Aside: Hi dad!

[2021 Alie] But before we get to your questions, a quick word about sponsors of the show. And since this is an encore presentation, back in 2018 we didn't have sponsors and we weren't able to donate to causes. But now we can! So in honor of Dr. John Bates, we're sending some cash to the Field Museum to continue their excellent education, outreach, and research. That was made possible by some companies that I genuinely like.

[Ad Break]

[2018 Alie] Okay, Patreon questions. This first question is from Neal Williams, and it's a good one. One that has plagued me ever since songwriter Joe Raposo posed it on *Sesame Street*. [sung by *Sesame Street* cast: "Which came fiiiiirst, the chicken or the egg?"]

Alie: Chicken or the egg? What came first?

John: Yeah, good question. Uh...

Alie: I mean, I guess the egg, because dinosaurs?!

John: I mean, it's funny, because if you look at chicken as a common name for *Gallus gallus*, which is a bird, and dinosaurs (the ancestors of chickens) laid eggs, then the egg came before the chicken in that sense [Ding! Ding! Ding!]

Alie: Yes! We figured it out.

John: There we go.

Alie: God, everything in my life is so much easier now.

John: You're going to get a lot of letters about that.

Alie: Well, you know what? I'll be like, why don't you consult an oologist? I have one. He's right here.

Jerry Davis wants to know: Are there any eggs that are poisonous to eat?

John: Wow, that's an interesting question. The quick answer to that is, no, not that I can think of. Today we were just talking about, there's a bird that was found to be poisonous in New Guinea called a pitohui, [ph: pitta-hooey] but it's because it eats beetles and is able to sequester the poisons, but I don't think its eggs would be poisonous.

Alie: Oh! Good to know. Way to go, bubuhui...

Aside: Pitohuis, by the way, look like pretty, russet-colored songbirds, like one's you'd see in the garden. But they use the same toxin as poison dart frogs. They're kind of like if you found out your aunt was an assassin.

Alie: Buhui-hui?

John: Pitohui.

Alie: Pitohui. Spencer Toth wants to know: Is a breakfast chicken egg really only one cell?

John: Yes.

Alie: [high pitched in surprise] REALLY?! It's one cell??

John: Yep!

Alie: Where's the nucleus? And the ribosomes and the organelles and stuff?

John: They're there. Yeah.

Alie: [*gasp*] I guess that makes sense! Because, like, any egg that a female of any species produces is one cell.

John: Right, is one cell.

Alie: Oh, that's weird! Oh, I've never thought about that. That's awesome. Brooke Danielle wants to know: What's the smallest egg in the world? Is it a hummingbird?

John: It'll be one of the hummingbirds, and there are enough small hummingbirds that probably have similar-sized eggs. The smallest hummingbird in the world is a bee hummingbird from Cuba. And then, you know, the amazing thing there is they have clutch sizes of two, and the egg of a bee hummingbird would take up a large amount of the internal space in a female bee hummingbird.

Alie: Is it just, like, the size of a Tic Tac? Bigger than that?

John: It actually looks very much like a Tic Tac. That's exactly what you'd think.

Aside: I got a chance to see some on the vault tour and yep, they're just a skosh larger than a Tic Tac, but waaay smaller than a Mento. They are 0% refreshing. Do not eat them on a date.

Tour audio

John: And so here are the chicklets. That's a black-chinned hummingbird from Arizona.

Alie: [*whispered*] Oh my gosh, those are tiny. I've definitely eaten breath mints larger than that.

John: Exactly.

Interview in John's office

Alie: Oh my god, how cute and tiny!

John: Which reminds me of an old joke from when I was a kid, which was: What did the hummingbird say when she laid an ostrich egg?

Alie: What?

John: Ouch. [*ba-dum tshhhhhh! canned laughter*]

Alie: That actually segues perfectly into Katie Cobb's question: Here's a stupid question. Does laying an egg hurt? It hurts for a human woman to give birth, but we don't do it a few times a week.

John: Yeah, I was actually looking as I prepped for this, and you know, we eat 5 billion eggs a year in the US alone, and the average chicken produces, like 360 or something.

Alie: Yeah. Like almost daily, right?

John: Yeah, I mean just, like, it's incredible. And so does it hurt? I mean, I don't know. It's not the same as childbirth in humans.

Alie: Right. In childbirth, we have real messed up pelvises. Like our pelvises are not so great.

Aside: See the *Ologies* episodes on Primatology and Gynecology for more on that.

Alie: Did you ever see the movie *Cool Hand Luke*?

John: Oh gosh. Yes.

Alie: You did? What did you think?

John: I liked *Cool Hand Luke*.

Alie: What about the egg-eating part?

John: Yeah, it never bothered me

Alie: Really?

Aside: [clip from *Cool Hand Luke*: "Nobody ever eats 50 eggs." "My boy says he can eat 50 eggs; he can eat 50 eggs!"]

Alie: Just thinking about that sometimes, when I make, like, a lot (a clutch if you will) of hard-boiled eggs. Sometimes I think about that, and I think, "Oh god..."

John: See, I think *Rocky* is the same way, where he comes in after the run, and just like... So yeah, I would never do that.

Alie: The funny thing is if you asked me to eat an undercooked egg, a raw egg, I'd be like "Absolutely no. Get out of my face." But if you asked me to eat cookie dough, which contains them, I'm like, "Sign me up. I'm there." What's the deal?

John: Right. It's completely illogical.

Alie: Mind over matter. Todd McLaren actually asked: What's your favorite egg art? Ukrainian Easter Egg? Madeira? Lace egg? Fabergé egg?

John: Oh, I think those Ukrainian eggs are incredible. Really amazing pieces of artwork.

Aside: These Ukrainian eggs, or Pysanka, are ornately detailed using melted beeswax, and they just keep dunking them in dye, over and over again. And yes, there is a museum of Pysanka eggs in Eastern Europe in case you're into that. Now, onto a very special question from someone who is technically like, your grandpod, Larry Ward, a.k.a. my pops.

Alie: He wants to know: How are snake eggs incubated? Does the mom or dad snake sit on them?

John: Yeah, they do actually. Yeah, they provide some... But it's funny because... That's a good question, actually. We need a herpetologist, because they're ectotherms.

Aside: For this, I brought out the big guns, and by guns I mean snakes, and I reached out to Dr. David Steen of the Herpetology episode a.k.a. @AlongsideWild on Twitter and he responded swiftly and with informational precision:

Not all snakes lay eggs, but of those that do, the vast majority lay them and leave; they incubate on their own. Pythons are a notable exception. They coil around the eggs and can use muscle contractions to generate heat.

So I like to think of Pythons doing a twitchy dance like, [singsong] "Let's hatch these dang babies!" Thanks for the question, Pops!

Alie: Alysia Mansfield asks: What causes color variations in eggs of the same species, for example, chicken eggs coming in brown, white, or blue?

John: Some of it's just individual variation. There's some kind of genetic variation in the DNA that's producing the compounds that are being deposited on the shells eventually. But there are these birds, like these common murrelets, where they've actually evolved the capacity... they're nesting in colonies on these cliffs, and everybody looks alike, and so the females have the ability to lay unique-looking eggs that can be completely different-looking from the bird right next to them. And that allows them to imprint on those eggs and then find them when they fly to and from the colony to eat. It's an incredibly cool thing.

And they're still trying to do the research. They're trying to figure out whether females lay the same kind of eggs from year to year, whether that's a genetically encoded pattern. And those are really interesting questions.

Alie: That's great. I never even thought about that. When you see speckled eggs that maybe look like granite, are those carbon copies of each other every time? Or are the speckles in different places?

John: I used to think that it probably was, there was probably a lot of variation that was genetically based. It may very well be that most of it's just randomly involved with how fast they are passing through the cloaca at the time, and when they come out it's literally just something different every time and the birds can imprint on it and then find it the next time.

Alie: Wow, that's so fascinating.

Aside: Also fascinating, of course, how people treat and eat their eggs all over the globe:

Alie: I'm told that you don't have to refrigerate eggs. In Europe, you just leave your eggs on the counter.

John: Those Europeans!

Alie: I know! They leave their butter on the counter, they have healthcare. They're crazy!

Aside: Egg suppliers in the US, and Australia, and Japan, and Scandinavia, they give their eggs a li'l rub-a-dub-dub bath with some soap and water, and then that removes this protective cuticle that prevents bacteria from getting into any hairline cracks. But in other parts of the world, eggs are not washed and the chickens are just vaccinated for salmonella. So, sure, there might be some poop on them, but you don't need an egg shelf in your fridge.

John: Yeah... When I was working in Brazil the first time, people used to leave mayonnaise unrefrigerated out in the forest.

Alie: Oh hell no.

John: And after a while I started eating it, and it was fine!

Alie: [*gasp*] Did you lose a lot of weight just because you were constantly sick?

John: No.

Alie: Really? Now speaking of salmonella, is that something that you worry about?

John: Yes.

Alie: Okay. Now, salmonella comes maybe from an infected bird. It comes right down the ol' poop chute, and then you need to wash the eggs to avoid the salmonella. Right?

John: Yeah, and I think that's one amazing thing about the industry is how well they're able to actually keep those things from being issues. When there's a salmonella outbreak these days, it's kind of stunning how quickly we know about it, and how quickly, in most cases, they figure out exactly where they come from.

Alie: I know, isn't it crazy?

Aside: PS: Salmonella, I just found this out, is the same genus of bacteria that causes Typhoid fever and, of course, a whole bunch of food poisoning. It can get on the eggs when it passes through the oviduct of a chicken, or IN the egg as it's forming. Now, not all chickens have salmonella and some will show signs, like lethargy, if they do have it.

Now, before you go hatching a crate of fertilized eggs, do know that backyard chickens, if they have salmonella, they can pass it along, especially – as the CDC warns – if there has been ‘snuggling’ of the chicken. And salmonella poisoning does land folks in the hospital, or it can be fatal. So, don’t go licking a bunch of chickens or eating raw eggs or poultry.

Ironically, eating raw salmon seems to be fine but that’s because the name salmonella was derived from one Dr. Daniel Elmer Salmon, a veterinary surgeon for whom it was named.

[old timey scratchy phonograph effect] “Here. Dr. Salmon, we have bestowed you with a legacy for generations: a very confusing fish-sounding disease of the chicken butt that scares people away from cookie dough.”

Also, if you’re a real cookie-dough trollop like myself, go ahead and make it with pasteurized eggs and feel free to eat the whole bowl.

Does anything in John’s work cause him to eat entire salad bowls filled with raw cookies?

Alie: What is the most annoying thing about eggs, or your job?

John: With eggs, I would say it’s keeping track of them. So, you have a clutch, but you have four or five eggs in that clutch. They number them all, and you’ve gotta be careful with respect to getting things mixed up. And then you don’t have anything else to go on if they do get mixed up.

Alie: Oof. Yeah, that’s true. I mean, you can’t put a little number on it?

John: They do put little numbers on them, but let’s say there are a bunch of little numbers and they were put on 120 years ago. It’s possible that you could have a hard time deciphering what was done.

Alie: Do you find that the notes are, like, very poetically descriptive? More so than they would be these days?

John: Not really. What’s beautiful about them is the different handwriting. People had so much better handwriting.

Aside: I did notice this when I was looking through and swooning over field note calligraphy among the vintage egg stacks:

Tour audio

Alie: I mean, that font too!

John: He had good handwriting.

Alie: I wonder... Do you think he was amateur? Do you think he was pro?

John: He was an amateur. All these guys were amateurs. Almost all the egg collecting was done by amateurs. It’s really amazing.

Alie: Really? Wow. And they called themselves oologists. And yet you’ve edited a book about eggs...

John: Yup. I’m not calling myself an oologist.

Alie: Oh my god. Ooh, just pathologically humble!

Interview in John’s office

John: It’s just beautiful cursive and things in ways that nobody would do today.

Alie: We gotta get back into that, I feel like, you know? Because those were the original fonts.

John: Maybe they'll make some computer programs that'll do it, and I can actually effectively do some of that, but it's not going to be me by handwriting.

Alie: It'd be so funny if field biologists had to take fountain pen courses, like, "We gotta keep it up, guys!"

John: There's no doubt that one of the things we should do is take printing courses. And I'm Exhibit A of somebody who is not good at that, and I have an immense amount of respect for my colleagues that actually write impeccable scientific field notes, and labels, and things.

Alie: I'm looking at some handwriting you have over here. Not bad!

John: No, I can't. I could tell you stories... "Let us write this for you."

Alie: Whoa! That's one way to get out of doing work! That's like when someone asks you to do the dishes so you break a dish and you never get asked to do the dishes again.

John: ... Except in this case, like, I really wish I could do it.

Alie: Yeah, aww! Well, I can't type, so you can learn to print and I'll learn how to type.
What do you love the most about eggs?

John: Just that they are such an important part of the biology of birds. I think that's the most interesting thing to me. And the other thing is that, actually, with all the birds in this world (and there are around 800-10,000 species) we probably don't know anything about the eggs of upwards of 30 to 40% of the species, maybe.

Alie: Wow, that's crazy.

John: Which is kind of interesting, you know? There's a lot we don't know about eggs.

Alie: There's so many mysteries. And what about your job? What's your favorite thing about your job?

John: Well, my favorite thing about my job is learning new things and getting to work with a group of organisms that I love, and really, kind of getting paid to do my avocation.

Alie: So you're a professional bird nerd?

John: Yeah, absolutely.

Alie: [*laughs*] I mean that's the dream for a birder! That's like making the major leagues.

John: Oh yeah. I tell students that I started out wanting to be... I was a pre-med and I took a cell biology course and I realized, "Really? Somebody might pay me to actually study birds the rest of my life!"

Alie: So you were like, [*vocal effect of car tires screeching*] veering off?

John: It was an easy veer.

Alie: Now, if you would have told yourself, a young birder, that you would get to do this for a living, would you have just been so stoked?

John: Yeah, my dad was a very active birdwatcher and I actually started birding because my brother was four years older and I realized if I wanted to spend any time with the two of them, I'd better learn something about birds. So, that's how I got interested in it, and even

back then I fell in love with the idea of being able to study birds up close and in that kind of way.

Alie: And now you get to study them every day.

John: Yup.

Alie: And things that come out of them.

John: Yep.

Alie: [laughs] The inside and the outside

John: Yeah! Exactly. And things that last like that.

Alie: I think your only job left is to come to terms with the fact that you're an oologist. I think you need to accept that.

John: See... I could put that on my door and my cards and stuff... That's just not gonna happen.

Alie: Imposter syndrome is everywhere. It's like, "I don't know if I know enough." And like, you wrote a book about eggs! What more do you want? [laughs] You manage a collection of 100,000 eggs!

John: But I think the notion of... I mean how many oologists can you actually be? At what point in time will you end it? Because I want to be an ornithologist. I liked the fact that I study birds, right?

Alie: Right! You can be more than one: I'm Italian, I'm also English. You know what I mean?

John: Yeah. Good point.

Alie: You can be all kinds of things. I mean, I live in LA, everyone's a hyphenate: yoga instructor-actor-life coach. So, I hereby proclaim that you are an oologist.

John: Fair enough.

Alie: Yay! Thank you so much for doing this. This was so fun.

John: My pleasure.

Alie: I could ask you a million egg questions, all day.

John: You'll have to come back and talk to an oologist!

Alie: Okay, (which is you)! [laughs]

So once again, Dr. John Bates of the wonderful [Field Museum of Chicago](#). If you like this podcast and the Field Museum, you should definitely check out The Brain Scoop, which is the Field Museum's web series hosted by the amazing Emily Graslie. She is a wonderful person and a great science communicator, so you might enjoy those. Also, those videos are family friendly, so you can watch those with your kids all you want.

Again, John was an editor, alongside Barbara Becker, of [The Book of Eggs: A Life-Size Guide to the Eggs of Six Hundred of the World's Bird Species](#) written by Mark E. Hauber and available through Chicago University Press. Warning: This book is gorgeous and if you see it you will want to purchase it. ["Treat ch'rself"]

And while you're at it, [OlogiesMerch.com](#) has you covered, in terms of hats, and backpacks, and totes, and sweatshirts, and baby onesies. Thank you Boni Dutch and Shannon Feltus for managing

that. Also, thank you to the [Patrons](#), who support the podcast for as little as 25 cents an episode for making this happen.

Thanks, Erin Talbert, for keeping the [Facebook Ologies Podcast Group](#) fun and cool, and full of curious non-jerks. And thanks as always to dinosaur egg baby Steven Ray Morris for editing *Ologies* all together every week. The theme song was written and performed by Nick Thorburn. At the end of the episode after the credits you know I tell a secret, and this week my secret is:

These asides aren't *that* long, but it has taken me almost double the amount of time to record them because I keep starting one and then messing up a word and then having to start over. I think it's because I'm recording this in my closet, and it's a thousand degrees. But this has been one of the most tongue-tied episodes I've ever had. I cannot figure it out. I'm just like, "ha blaahhh hablah."

Thank you for making it this far; I am about to collapse from heat on my computer. Oh my god!

Berbye!

Transcribed by Rika Eringa and Emily White

Some links which may be of use to you:

[Eggin' Old School Style](#)

["The Book of Eggs"](#)

[Ming Vase or Egg YOU DECIDE](#)

[Egggsponsive elephant bird eggs](#)

[In case you need to hacksaw an emu egg](#)

[Chalaza — kind of like the slingshot ride](#)

[Are you afraid of the boogeyman because I am](#)

[Eggs yeah nope I guess?](#)

[How to boil eggs:](#)

[You can buy an ostrich egg purse](#)

[Can you hatch Trader Chickens?](#)

[Balut 101](#)

[Century Eggs mmmm](#)

[Making Ukrainian Pysanka](#)

[Pitohui bird: poisonous berb](#)

[Say No to Dough](#)

[Emotional support chickens](#)

[We named a bacteria after you, Dr. Salmon!](#)