# Urban Rodentology with Bobby Corrigan Ologies Podcast January 21, 2021

Oh hey, it's that guy who's asleep upright on the bus and doesn't know that you're staring at him, waiting to see if he'll wake up, Alie Ward, back with an episode that's just, like, musical to our ears, if you are following the recent release of the fan-created TikTok *Ratatouille* musical that came out this past week. But even if literally none of those words in succession made any sense to you, that's okay. This ology is one that is of dark intrigue, and cuddles, and appalled curiosity. So, better to arm yourself with facts and trivia about the critters that you curse: Rats!

But not just any rats. City rats. Sewer rodents. Pizza rats. Chipotle goblins. The outdoor pets that none of us own. Let's learn to love them.

But first, some love for you. Thank you to the Patrons, thanks to the folks who take a second to subscribe and rate. It really matters so much! And the ones who take a minute or two to leave a review, of which I read all while I clutch my heart. And then I read one aloud, such as this week, from Krysten G, who says:

Hooked! Absolutely love this podcast. It comes with a Dad, and I feel like we have a healthy and inquisitive relationship. Join the fam! You will be suckered into eating Tim Tams, huffing trees, and cutting bangs.

Also, Aaron Loves Turtles, you named a cat after me, and no, it's not weird. It's great.

Okay, so rodentology comes from the Latin word *rōdere*, meaning 'to gnaw at' or 'eat away', which is very sexy. And the word rodent covers thousands of species that we could not possibly encapsulate in one interview. But for this episode, we're talking rats! Because this Urban Rodentologist is the expert on sewer rats. That's right – there's a guy for that. And he has the Twitter handle @Rodentologist. He's got it!

He is cited in hundreds of articles about the outside animals that, maybe, you're *not* looking for as a roommate. Now, if there is an avocado being nibbled on at midnight, or a slice dragged down a stairwell, his phone is a-jingle for quotes and insight. So when he returned an email saying, "Sounds super!" about doing this interview, I honestly think I gasped. And during the interview itself, I enjoyed this chat, so, so, so much. I remember having a thought, "I have the best job on Earth." He's that sweet, honest, endearing, and curious, and wonder-filled of a rodentologist. You're going to love him! I'm so excited for you.

He got his PhD at Purdue University in Rodentology, studying rodent control technology for pig barns and chicken facilities, and was a long-time research scientist for the New York Department of Health and Mental Hygiene. He's taught rat academy to city planners, and he's known all over the world for his knowledge, compassion, and detective work in helping humans and rats co-exist. He owns RMC Pest Management Consulting and is regularly called on by the press.

We hopped on a call; it was truly one of my greatest professional joys, and I think I love rats now. So grab a snack from the garbage, and learn all about everything from their super-powered teeth, to their scaly naked tail, their cute pink li'l hands, relationships, their preferred food dialects, how they communicate, where they sleep, how big they really get, the best real estate for rats, how history books gave them the shaft, how many rats one couple can have, and of course, how to deal humanely if they ever become an unwelcomed houseguest, with, likely one of the world's most beloved rodentologists, Dr. Robert Corrigan.

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Dr. Bobby Corrigan: Yes, my name is Robert Corrigan.

Alie Ward: And you go by Bobby, too?

Bobby: Correct. I go by Bobby.

Alie: Or Dr. Corrigan.

Bobby: I usually just go by Bobby Corrigan.

Alie: [laughs] And it's he/him, right?

Bobby: Yes.

Alie: Okay, great. I'm so excited to talk to you! You have no idea. I have been screencapping every article that you have been quoted in for, like, the last year or two. This is like the Holy Grail of Rodentology.

Bobby: Thank you.

- Alie: Can you tell me a little bit about what got you interested in rodents, particularly urban rodents? Whereabout are you based? And have you always been based in an urban environment?
- **Bobby:** Well, I'm based just north of New York City along the Hudson River. I was born in Brooklyn, raised on Long Island, and I took a two-year course at a state university on Long Island, State University of Farmingdale. And I met an urban entomologist who was teaching a course, and it was him, Dr. Frishman, that inspired me to study the animals that share our urban environment. And from there I graduated, took a job to save money for the rest of my college, and I took a job as a pest control guy in New York City.

And from there I ended up in the sewers. You know, the new guy gets the crazy jobs, so they put me in the sewers to bait for rats. Which sounds pretty gross, but I'm a nature nerd so I just thought, "This is so cool!" even though I had to crawl in and out of sewers for several months before they promoted me and allowed me above ground. But that's where it all started. And then when I went back to college and Purdue University. In graduate school, I went on and said, "I want to study rodents," and they said okay. So, that was the path.

- **Alie:** When you say, "I want to study rodents," do you get to select the type of rodent? Or do you have to learn about every single rodent under the sun and *then* go take a job working with, say, urban rats?
- **Bobby:** That's a great question. At first... I was very lucky with the scientists at Purdue. They said, "As long as it's going to take you through the scientific process, it almost doesn't matter what you want to study in that program. You could've studied earthworms," which I thought were pretty cool, just that in itself. But I said, "Well, I remember my days in the sewers of New York City," and I didn't know what I was looking at, quite honestly, but I thought it was pretty cool, pretty complex, and that's what I asked to do. They said, "Go for it." So, I asked specifically for just urban rodents, which is only three species. It's the house mouse, Norway rats, and it's the roof rat. Just those three. And that's enough for a hundred careers right there. So that's where I am these days.
  - Alie: What were the sewers like? What was your first day like in the sewers? Did you see... What kind of things do you see down there? What does it smell like? Is it scary? Is it fun?

**Bobby:** You know, I have to tell you, when I first climbed down a ladder into a sewer of New York City, my heart was pounding in my chest because, I mean, you don't know what you're going into, right? Even though someone had to take me down and show me what to do, what not to do, and these kinds of things, it's pretty intimidating, to be honest with you. And there's not much to it. So, it's not exciting. It's just a tunnel and right below your feet is a low stream of, you know, effluent that goes by. And because there's enough air exchange, Alie... A lot of people think, "Oh, it must smell horrible," and stuff, but it actually does not. I mean, you don't really want to stand there and stare at what goes by, to be honest; you can imagine. But at the same time, it's just a tunnel.

The tunnels I was in, the old tunnels, that's where the rats like to go, and they're made out of brick. And there's not hordes of rats either. Everyone thinks there's these monster populations of rats. It's like, five rats here and there scurry about, then you don't see any for 50 or 60 feet, then another three, then so forth and so on. You know, a mammal's a mammal, whether it's a whale in the ocean or a rat in a sewer. To me, being a nature nerd, I just said, "Holy cow! There's these animals that live in the pitch black down here, completely, but yet they know their way around. They communicate. I see them nuzzling each other..." So it was all, to me, super cool.

- **Alie:** It's so interesting to think, too, when you're bustling around Manhattan that there's just an entirely different world; an ecosystem under your feet all the time.
- Bobby: Exactly! That's exactly it. I couldn't have said it any better.
  - Alie: And how did these cosmopolitan New York rats get down there from, you know, Norway, or was it China? Did they come over on boats? How did North America get this population?
- **Bobby:** Well, the history seems to say that they originated in Central Asia. There's some debate about exactly where. But for the most part it's probably just slightly west of Turkmenistan. And over time, with the trade routes grains, spices, Silk Road, this kind of thing they made their way to Europe, and once into Europe, of course, especially with early trade with North America and explorers, over they came with the ships. Probably the first rat was the black rat, which arrived in Jamestown, Virginia. That's the best history we have on that. And the rats from there, if not from ships directly, in Philadelphia, New York City, all the ports of the East Coast. You know, there were thousands of ships. If you look at some of the paintings of the late 1700s and early 1800s, you know, the harbors were packed like traffic jams with ships from all over the world trying to colonize, and bring trade, and so forth.

**Aside:** Sidenote: What happened to all those ships? Well, over time they crumble, they crash, they sink. But don't worry. We have an episode about maritime archaeology, i.e. shipwrecks, coming up! But for now, rats: just packin' their bags full of cheese and boarding cruises.

- **Bobby:** Rats love ships. [*clip of Lonely Island song ft. T-Pain: "Never thought I'd be on a boat!"*] They're by the water, so we were probably bringing in pockets of rats every single day from different parts of Europe and Asia. And from there they found... especially in New York, Alie, they found... Manhattan's an island, there's streams everywhere, there was lots of earth everywhere, people were populating and putting out their refuse. So the rats probably said, "Wow. This North America deal is fabulous! Yay for the New World!"
  - Alie: [*laughs*] And how do they do so well in low light? I imagine if they're in the cargo hold of an old, creaky ship hundreds of years ago, it's got to be low levels of light, not a lot of vegetation too. How do they do so well in that environment?

- **Bobby:** Well, that's a credit to these species. They're so innovative. They're so adaptable. They're very creative in the way they can find food and what they will eat. And if need be, they will eat the same thing, day after day after day. But in those creaky holds of the ship, as you put it, they were, a lot of times, stealing the food of people on board. All these sailors would get to their own food and they'd see that the rats and the mice had gotten into it already. In fact, that's why there's a word that scientists in rodentology use for these animals. It's called kleptoparasites, meaning they parasitize us by stealing from us more than anything. So, that's how they got over the ocean, by stealing from the sailors.
  - Alie: Ah! And now they're stealing avocados; they're stealing slices of pizza. They seem to have good taste.
- **Bobby:** They sure do. They have the same taste as we do. They love pizza, as everyone knows. But it's gotta be New York pizza!
  - Alie: [laughs] It's something in the water!

#### Bobby: Exactly.

**Aside:** Pizza Rat, sidenote, made its glorious debut in 2015 when a man named Matt Little bore witness to one blessed rodent dragging a New York slice. Now 11.6 million people have watched this 14-second clip.

And also, nobody knows if it's really the water that makes New York pizza so legendary. Some theorize it's the decades-old crusty ovens, or it's the rush of churning out so many slices in a day that leads to hastily-made-but-better pies. Others say it's just straight up skill. Either way, rats know what's good.

- **Alie:** Now, people have been asking you a lot, with 2020, with coronavirus and the pandemic, the streets look a lot different than they did a year ago. So, how are urban rodents adapting to our social structure changing so much?
- **Bobby:** It's the biggest question on the docket right now, as to what's going on. And of course, nobody was ready for this, right? So, nobody had an experiment set up and designed to start taking data. But all the rodentologists around the country, we have been paying close attention. Here in New York, and it's similar to other cities, they've been that opportunist. Every night, the garbage gets put out on the street for collection. And in New York alone we have thousands... something like 22,000 restaurants. So, the rats have had it easy for decades. And every night, all they had to do was leave their comfortable little nest, and come out to the curb, and there's human waste, human food, just in bags and cans. So, all of a sudden, as you know, that disappeared. Overnight that was gone when the city shut down. ["Where'd everybody go?"]

And right now, by the way... I don't know how it is for you in California, but we are going into our shutdown again right now. So, what we saw initially... What *I* saw initially is, they came out the very first night, March 18th was when we shut down, and there was no food on the curb.

**Aside:** Okay, if you're trying to envision this, just picture, like, 15-20 whiskery rodents darting up and down a trash can, or maybe coyly peeking out from behind a car tire. And size-wise, they're around 16-20 inches long total. But imagine the rat's body from about the tip of your middle finger to your wrist. The tail is kind of like from your wrist almost to your elbow... or somebody else's elbow. Picture this is somebody else's arm. Or don't picture a person at all. I should... I should just erase this aside.

**Bobby:** We study rats because they're like us. So, picture yourself. If all of a sudden: no dinner; no breakfast the next day; no dinner again; no breakfast for three days in a row. You're going to be stressed, obviously. You're a mammal, you need food. So these rats, they're stressed, and when they came out at the end of March, it was very serious for them because night after night there was no food.

So two things happened. One is, they started fighting amongst themselves, which is what we would do too. Started fighting, bickering. The strongest rats started killing the weaker rats to consume them. That's the way nature works with almost all animals. And second to that is, some of the rats, especially the weaker ones, said, "Well, maybe there's food elsewhere, further down the road. Maybe there's food at a long distance." And you know, they're capable of traveling pretty good distances in a short period of time. So, those two things; they started fighting, killing, cannibalizing, and then dispersing, looking for, "Where *is* the food?"

And they also started saying, "Maybe it's during the day..." So people started calling and saying, "We're seeing rats in the middle of the day. They're very brazen. They look brave, like they're going to attack my ankles or something." I'd tell everyone, "Look, these are disoriented, stressed out, hungry mammals." Whether it's cats, or rats, or whales, or humans, we're all going to have similar behavior when you're threatened with death because of hunger.

**Aside:** And yes, there are plenty of documented cases of this behavior in the human species, which is way more disgusting than learning about cute, pink-footed, smart, scrappy little rascals whose evolutionary strategy is simply: "You gonna eat that?"

- **Alie:** Are you thinking that once the pandemic is over knock on wood that things will return to normal fairly quickly because they're so adaptable? Or do you think this has forever changed the way that rats are living in urban environments?
- **Bobby:** I think they're going to return to normal fairly quickly. Part of the reason, again, rats are so successful and have colonized almost the entire planet Earth is, you know, they have an incredible ability to reproduce, as everyone knows. And in fact, if you want to impact a rat population, Alie, you have to remove about 96% of all their individuals. 96%.

Alie: Oh my god...

Bobby: That's right. So let's just say for the sake of argument, a thousand rats occupying, you know, some city street, Los Angeles, or New York, or wherever; to get rid of 96% of a thousand rats, that takes *a lot*. That's almost like a complete disease wipeout. So, there's going to be plenty of rats that survive this pandemic. Even though we don't have any measurements. 60, 70, 38? I don't know what percent are going to be eliminated, but it's not going to be 96%. If it's summertime when you knock them down to, let's say, 94%, in six months they're back to the original population.

Alie: [in awe] Wow...

**Bobby:** I know! It's an amazing, amazing mammal.

Alie: They can make *so many* babies! And you mentioned something about how they came out of their nests looking for food, and I guess I had never thought about it, but where are they kickin' it when they're not yumming up on a slice on the sidewalk? Like, are they nocturnal? Are they sleeping in comfy little cozy beds that they've made out of leaves? Where are they hanging out? Where do they sleep?

**Bobby:** Well, they're very adaptable, so a city rat, if they could talk to us they'd say, "Look, we're from the Mongolian area, we're from Asia. We are burrowing mammals. We construct our nest in the ground." Their brain is what's called a geophilic orientation, which means they go into the earth. They're attracted by going down into the earth, geophilic. And so even in a city, their brain says, [*with mouse voice effect*] "If I can, I'd like to dig into the earth of this city."

So, their number one natural place to go is if there's any kind of, what we call, available earthen space, in a city. Like a tree pit, or a park, or somebody's garden that's undisturbed, they will construct a burrow. They dig down anywhere from 12-18 inches on a gradual slope, and about three feet into that tunnel they create a nest, a bedroom, and they line that with leaves, and straw, and in cities they love plastic. I find plastic is their beds many times. And then they construct a back door to that bedroom.

- Alie: What!
- **Bobby:** Yeah! Another three feet out in two different directions. They have back doors in case somebody comes in the front door, like a snake, or rain floods. They have a way out. And they disguise those two back doors, by the way. So, when they're not out foraging about, to your question, they're down in those very well constructed nests with escape holes built into them.
  - Alie: Ah! And they don't even have to worry about rent control. [*laughs*] Or having to watch the obituaries to see when something opens up. They just build their own!

#### Bobby: Exactly!

Alie: So, obviously rats are smart. They're smarter than we give them credit for, I imagine. Right?

**Bobby:** Well, the research keeps coming in. We've learned just in the past three or four years, if you follow the journal publications from good journals, we are learning so much that these animals... We've underestimated them forever in their intelligence. We always said, "Oh, rats are smart..." But if you dive into this you'll find that now we know they can use tools. We thought that was reserved for the "higher" mammals like chimpanzees, but rodents use tools.

Alie: What kind of tools? Like a spork? Or a gun? What do they have??

**Bobby:** Well, if they have a hard time, say, getting a piece of food they want out between two rocks, for example, they'll go find a stick, pick it up with their teeth, and bring it over, and use that to help them dig out that piece of food.

Exterminators are sending me cam footage, which has been amazing. They're putting up cams in buildings to see where the rats are hiding so they can get rid of them. And they're sending me footage the past couple of years where rats have been seen picking up these sticks and dropping them on traps to set them off, and then they steal the bait afterwards.

Alie: 0o0o0o0H! [laughs delightedly] Genius!

**Aside:** Okay, so way back in 2004 when sequencing genomes was not something you could do via a Q-tip and a website, the rat genome was among the first under the proverbial microscope. One researcher, Baylor College's Richard Gibbs, estimated that rodent evolution was an order of magnitude faster than humans. Although, given that they only gestate for 21 or so days and produce new generations 92x faster than you or me, maybe rats are going to be driving this ship soon. Who knows?

Also, if you're trying to do the calculations on how big of a minivan a rat family would need, just know that in the span of one year, one happy rat couple can grow their family from just the two of 'em to... 15,000. Which means that every rat you see scuttling under a discarded couch is probably somebody's great-great-great-great-grandma, which is very sweet.

Now, this whole time, you've thought rats were like a 1996 Pontiac Sunfire that smelled like bong farts. But really, rats are souped-up flying DeLoreans that run on banana peels, and I bet they brag about it to each other.

- **Alie:** So, I have heard that they can communicate among themselves. I've seen videos where they laugh when they're tickled. Do they have languages among themselves? How do they tell each other, like, "Hey, don't go down here. There's a big cat over there."?
- **Bobby:** Yes, it's fascinating, that whole business of audible biology. They have these vocal sounds that they will use to communicate to each other. They'll clatter their teeth together, for example, for aggression. They will make these squeaks and sounds. [*rat squeaks*] They will hiss. [*rat hissing*] So, they have these vocalizations that actually can be picked up and heard. They also have ultrasonic sounds that they communicate with. In fact, there's research that shows, during mating, trying to attract a mate, for example, they will use ultrasonic songs and squeaks to try to attract the opposite sex for mating.

**Aside:** Mmm... Rodents getting hot and freaky. Let's talk about it. So, when a lady rat is DTMFTB (Down To Make Fifteen Thousand Babies) she'll hop and dart about, and her version of swiping right is what is called a 'lordosis response', which is similar to a good old-fashioned twerk. Just back arches, butt up, providing access to the business. And rather than make an O-face, the rats, in the throes of their passion will make ultrasonic squeaks at around 15kHz. And then the male will bellow a little lower to tell other lads, "Please stay away. This one loves me... for a few minutes."

Now, in early 2019, a team of researchers at Washington University's Neumaier lab published a paper in the journal *Neuropsychopharmacology* about decoding ultrasonic rat chatter using neural networks. It's called DeepSqueak. And soon we'll be able to learn all about their rat gossip.

So, they're more than meets the eye, and the ear, and also the nose.

**Bobby:** And after that, then they have another system that is extremely cool, and that's pheromones. So, rats and mice, they urinate of course, a lot. Part of the reason they urinate a lot is because within that urine there's pheromones. And they'll defecate a lot. Research has shown that the rats in the city, for example, sometimes – and you probably have seen it, I'm sure – you'll see some rat droppings someplace. And sometimes you'll find six or seven of those droppings in the same spot.

Well, that was deliberately done as a communication message for the colony that exists in that area that something of a resource was located there; either food, or shelter, or water, or something. Because rats, again, good journal research has shown that in those droppings of rats is pheromones that communicate to the colony members. So, they speak to each other; not with words but with chemicals.

Alie: [laughs] Oh my gosh. We thought Twitter was advanced! That's something. I love that their social media is, just, a small pile of poops. Like, "Did you see what he pooped?! Oh my god!" [laughs]

- **Bobby:** Yes! And you know, it's funny, Alie. If you look at pictures taken... *National Geographic* did this beautifully, where they capture a family of rodents together doing something, and you will see inevitably one or two of those rats smelling the droppings of their brothers, or sisters, or parents. Well, they're communicating. They'll say, "Hey, what are they trying to tell me?"
  - Alie: Oh my gosh!

**Aside:** You know what? Later today, FaceTime your mom, or leave a nice comment on your cousin's Instagram, and just be thankful that we have a different way of touching base.

- **Alie:** And one of the most common questions that I just have to ask on behalf of all of us. When we hear the words 'Urban Rodentologist' we think Rat King. Is a rat king a real phenomenon? Have you heard of this?
- **Bobby:** Of course, yes. And I can appreciate that many people ask you that question at *Ologies*. I've never seen one. I've seen an artistic... I think it's a famous piece of art or ceramic. Somebody somewhere, back I believe in the 1800s, showed a group of rats all tangled up together with their tails and they called that a Rat King.

**Aside:** Sidenote: The French call this gruesome, tangly occurrence a *rouet de rats*, or a spinning wheel of rats, as the knot would be the center and then the tails look like spokes. So, *wheel* big trouble for rodents. And also, it kind of looks like a plate of thick spaghetti that's rimmed in rats. It's horrifying. But a few preserved examples dating back hundreds of years are in museums, but are they a hoax? Bobby smells a rat.

**Bobby:** But I've never seen it in the wild. There's no authentic scientific citation of such. Having said that, I would say it is possible that whoever started that business did witness it. Because you know, I have uncovered rat nests where all the rats were about the same age, kind of like teenage rats, and they're all huddled together in a nest, and they had a sudden calamity of some sort that killed them all. Either they all... sadly, a rock or something moved on top of them, and they were all huddled together, and their tails were at least intertwined. That doesn't mean they were tangled up, but they were intertwined.

So, I can see where someone may have discovered, maybe, a group of rodents that froze to death below ground or something like this and all their tails were intertwined and assumed they wouldn't be able to get out of it. But they get out of that easily, every single night when they go out to forage when they're a family.

- Alie: They sound so much cuter when there's a pile of them! I don't know why! It reminds me of, like, when you're a kid and your neighbor's dog had puppies. [*baby-talking*] Just a bunch of li'l teenage rats havin' a slumber party.
- **Bobby:** Listen, they *are* cute, and they make great pets. I'll just insert that right there for the record. They're wonderful, wonderful mammals.

Alie: Have you had rats as pets?

**Bobby:** Yes, I have. I've had different rodents here and there, especially when I was younger. But I have to tell you, I had six brothers and two sisters and it didn't go over well. Because they smell if you don't clean the bedding regularly, and you know, all of this. But if you can do it, they make great pets.

**Aside:** How precious is he! Also, if you're ready to make a rat your best friend, consider getting a pair of BFFs, as rats love to chill and kick it with their buds. Now, there are so, so

many varieties and subspecies of the brown rat, including the white rats that you think of when you're picturing, like, a research animal. But apparently, mouse models are much more common in medical trials that involve our poor rodent friends, although all mammals descended from a common relative 80 million years ago. So, our genomes, and guts, and organs? Pretty analogous.

Now, what's the difference between a mouse and a rat? I know you want to know. Rats: they're bigger, they're more cautious. And mice: they've got pointier little noses, they're littler, and they're more curious. But what if you only have evidence of them, i.e., their butt confetti, to go by? Well, mice – smaller and pointier turds. Rats are more blunt and larger. But roof rats, or black rats, are kind of in the middle of both. I hope this knowledge never comes in handy for you.

- Alie: And what about movies with rats? Are there any that you feel like get it right? Like *Ratatouille? The Rats of NIMH*? Any that you feel like, "They get rats. They did a good job."?
- **Bobby:** Well, since you mentioned *Ratatouille*, I would concur. I would actually say that *Ratatouille* did get it right. They did great graphics. They really closely mimicked their body movements and their gestures. So, I was very impressed with *Ratatouille*, and I was also impressed with the message of *Ratatouille*, how we have to come up with better ways of co-existing on this planet than the way we're doing it right now.

Other movies, you know, sadly for the rats, they tend to turn them into these horrible villains and monsters that are waiting to attack you. Most of the movies have actually, sadly, given rats a bad name.

Alie: Aww! What about myths about New York City rats that you would love to dispel?

**Bobby:** Well, you know, the one I hear the most, and in fact you've probably seen the recent press about a certain restaurant, and avocados, and this kind of thing. And you know, people turn them into... For example, that particular article, they weren't just rats. What were they? They were *ginormous* rats. Ginormous! What kind of word?

But in New York City, the big myth is... It seems like every headline editor that writes a story about the rats has to outdo the other story in size. So they're gigantic, ginormous, they're Super, they're huge! Monster size! But the fact of the matter is, Alie, the average rat is not anything of great size. I even have a bet out. If anyone ever brings me a two-pound rat, two-pound Norway rat, I will write them a check for \$500. [*Alie laughs*] It's never gonna happen! Never gonna happen. So, the biggest myth is that they don't get to be super rats, or big, giant, ginormous rats. There's no such thing.

Alie: That was one question that so many patrons asked so I'm glad we got that out of the way.

**Bobby:** The rat story I hear more than others when I'm out doing surveys, people say, "What are you doing?" And I'll say, "Well, I'm surveying for rats..." and so forth. And some person will go, "You know, I heard there was a guy, five years ago, he's a friend of a friend's cousin's second brother, and he once went down into a sewer to check on something and he never came out again! They never saw him again, but they saw all his bones, and they think the rats ate him alive." That one I get *all the time*. And they say it with the most straight face. Like, "It's true! It's true!" But I'll say, "What was the person's name?" "Oh, I don't know. He's a friend of a friend of a friend."

**Aside:** And side note, if you listened to last week's Dendrology update with Casey, now you know why I left in his story about the guy falling into a pit of rats. But to be fair, just this

past October, a chasm *did* open up on a Bronx sidewalk and plunged a man into a pit of rats. And many of us, honestly, probably didn't even hear about it or remember it because... 2020.

- **Bobby:** And I say, "Oh, very interesting. Wow. That's fascinating." But it seems like we don't have too many funny stories about rats because people love to hate them. Again, sadly, for the rats.
  - Alie: Well, you know, you sometimes hear about, "if you die alone and you have a cat, your cat will make a meal of you," but if you die in an apartment, will the rats be like, "Welp. No one else is eatin' this!" Would that happen to you??
- **Bobby:** You know, mammals, right? Including humans, as you probably know. If you die... And I've slept in barns with rats, literally, for my PhD. So people said, "What are you doing? Suppose they'll attack you and eat you!" And I said, "As long as there's other foods that they normally have, that's dependable, they're not going to attack me and eat me." And that's the same. However, of course, if they locked up that barn that I used to sleep in, and we took away *all* the rats' food, and I was the only warm thing in there with muscle tissues, of course they're going to eat me! Same as humans have done in the course of history. Occasionally there's been stories of human cannibalistic events. So, that's what mammals do.

Alie: Ah, that's good to know... I think.

## Bobby: Yes.

Alie: Can I ask you questions from listeners?

### Bobby: Sure!

**Alie:** Ah! We have so many. People are so excited. They're also excited about you in particular. People are like, "[*gasp!*] You. Got. Bobby Corrigan! Oh my god!" So, people are very excited.

## Bobby: Gee!

Alie: I know! You're famous!

**Aside:** Y'all, a globally-lauded rat expert answers your questions! But first, a quick break to make a donation to the cause of the Rodentologist's choosing. And this week Dr. Bobby Corrigan directed it toward a personal cause, the Yash Gandhi Foundation in honor of his nephew Peter and wife Sarah Corrigan, and their baby daughter Adelaide, who suffers from a very rare inherited condition called Mucolipidosis II, also known as I-cell Disease. There's no treatment or cure right now, and the Yash Gandhi Foundation is a nonprofit that directs 100% of donations to I-cell research. Peter and Sarah, give little Adelaide a hug from us at *Ologies*.

That donation was made by possible sponsors of the show who you may hear about now, via words coming out of my rat hole.

### [Ad Break]

Okay. Your questions. The following patrons: Eli J, RJ Doidge, ThatsGoodGouda, Jason Miller, Zak Smolen, Juliebear, Steve C, and Megan Younce all wanted to know: How big are we talkin'?

- Alie: Zachary Peterson said: My dad used to work a job in which he cleaned sewers, and apparently the rats in LA can get to the size of house cats. Is this a real thing or flimflam? Are rats in different parts of the country bigger than others?
- **Bobby:** No. They're not. There's only two species, and I've been in LA a lot; I've done rat surveys in LA. Out your way in LA, there's roof rats, the black rat it's also called; and the Norway rat, the brown rat. Here in New York City we only have the brown rat. But in LA, the rats of the sewers both species will use the sewers in LA. What he will notice is, when you're in a sewer, and haven't been down there, and the light's not great, and you get close to a rat in a sewer by mistake which I've done many, many times the rat's frightened.

So what does the rat do, Alie, when it's frightened? It does like when you have cats. They raise their hackles. So the rats I saw when I first went into... I would say the same thing. I'd come out there like, "Oh my god! I saw a rat today that was as big as an alley cat!" Yeah, because the rat was like, "Whoa! There's a predator standing right next to me! Try to look big and scary!" Which they did.

Alie: Ah! Success.

**Aside:** Somewhere, right now, there's a bear in Yellowstone telling its friends that it saw an eight-foot-tall puffy human that spit spicy venom in its face, and all the bears are like, "WHAT??"

**Bobby:** But that's their little trick, isn't it? Like, try to make yourself look big, like a lot of handling time for the predator, you know? And predators make decisions on that. They'll say, "You know what? What's too big of a fight for me to have a meal, so I'll look for something easier to handle."

Alie: Aw, they're all fluff! They're just scared, frightened fluff. It's so sweet!

- **Bobby:** [*laughs*] That's a good way to put it. They are. They're fluff.
  - **Alie:** We were talking about Southern California rats, and patron Teresa Dezazzo, who is a firsttime question-asker, says: Living in Southern California, we have these critters called tree rats or roof rats, and they hunker down in car engines over the winter months, and they chew wires and fluid lines. What can you do to dissuade them from using undercarriages?

And I actually had this problem myself! I had a Prius, and I heard that they would lubricate the wire harnesses with peanut oil and rats would love to get in there. But yeah, we cracked open my hood and found, like, an orange, and some snails. How do you dissuade them from living in your car?

**Bobby:** You know, it's a real problem, to be honest with you. I have a barn, and I have a tractor in that barn, and it has wires. I have this farm in addition to where I am, and the same thing. I get it. The roof rats of California love to get into those cars for sure. They go up by the wheelbase, they climb on top of the air filter, and they will bring food in there. They'll eat in there. And they will gnaw on the wires regularly. So, there's no product, for example, that you can buy that's going to really dissuade them from doing that.

However, I tell everybody: Look. Do the best you can, especially if you have a garage. It's not difficult to rodent-proof your garage. It's pretty darn simple to do that, so keep them out. Don't store any food in that garage that's going to bring them in there to where they want to get underneath the hood. And finally, if you can, if for whatever reason... and there are cases where there's lots of rats, lots of mice that start visiting the garages and carports. If you can just leave your hood open at night, propped open, it usually discourages them

from doing that completely. If that's even the worst thing there, then sometimes you can put out little bags of mothballs and pick them up every day, put them back out... It's annoying. We all like to get into our car and drive away. But if you live in an area where there's rodents, and they're bothering your car, you just gotta go those few extra steps.

- Alie: I thought you might appreciate that Elle Hoffman says that: When I lived in Queens, I had to take my car to the shop, and they found a rat's nest with chewed wires and FIVE WHOLE EMPANADAS in the engine, [*laughs*] and they sent pictures. I just wanted to tell you that, because... That's a haul, man! I don't even...
- **Bobby:** [*laughs*] That is excellent. Thanks for sharing that. That's very cool.
  - Alie: [*laughing*] Five whole empanadas! That seems like that would last a week! That's like going to Costco for a rat. Amazing.
- **Bobby:** It must've been thinking, "I'm not going to be able to get out for a couple days. I better go grocery shopping." [*laughs*]

**Aside:** Okay, math break. How long would five empanadas last one rat, calories-wise? So, apparently one city rat needs an ounce of food, or 28g, a day to survive. And I know 28g of food can vary greatly in caloric density and water content. But let's just say, a single rat living in your Nissan needs 28g of empanadas a day to survive.

So I looked it up. The average empanada – all that glorious pastry and cheesy, meaty filling – weighs in at around 89g. Meaning that the rat in the car was stocked up for two fortnights, or a full moon cycle, of munching! Indeed. It's just like high tailing it to Costco. Plus, the world is your free sample.

Speaking of tails, by the way, patrons Diana Burgess and Heidi Wright had some questions, as well as:

Alie: Amelia Hunter wants to know: Why are rat tails hairless?

**Bobby:** You know, some of the different species of rats have quite a bit of fur on them, depending on the species. And with the commensal rodents, the city rodents, the ones domestic by us, over time, you know, having a coat of fur over that tail is not advantageous because in city areas, you're going through sewers, you're going through garbage, you're going through dirty areas. And if you have a lot of fur on that tail, you can imagine what's going to happen. You're going to have junk throughout that thing. You're going to have things stuck to it. You're going to have all kinds of stuff that you're constantly going to have to clean off.

So over time, the rodents, you know, for these burrowing activities and being involved with areas with lots of stuff in the ground, no doubt just evolved to having no fur, not much hair. They do have sparse hairs on that tail but it's called a scaly tail. For them, for that particular species and for the millennia of their life, they just evolve to that species not having a lot of fur to catch things.

**Aside:** Imagine, like, keeping your hair long and loose when you work in an open-concept taffy factory. Just, no. Buzz it. Also, speaking of sticky situations: though rat kings are debated as flimflam, there's a lot of photographic evidence on squirrel kings. Yes, their bushy, luxurious tails can catch sap in a nest and then before you know it, a bunch of juveniles are joined at the tangly butts and it's the saddest animal video I've ever, maybe ever seen. But they have been able to take them into vets, and sedate them, and buzz cut them. But yes: squirrel kings. They are a thing and I'm sorry I have broken your heart.

Let's change the subject to giant prehistoric Amazonian rainforest rats that lived 10 million years ago and weighed *as much as an uncle*: 175 pounds! But they had just teeny tiny 4-ounce brains, kind of like its modern cousin the gym rat. Haha, I kid. I don't know how to count macros or lift things, so joke's on me.

Now, this hulking rodent beast we're talking about, 10 million years ago, was a marvel. But before you rent a time machine to check it out, please know that here, still sauntering on Earth, the largest rodent of unusual size is the capybara and they don't eff around. They weigh up to 150 pounds of ripped rodent. And now, okay, I know this episode is about *Rattus rattus*, the black or the roof rat, and the poorly named Norwegian, or brown rat, that has become the dominant city species, but let's not forget that we still need episodes on the other 2,000 or so species of rodents, like porcupines, and beavers, and chinchillas, and squirrels, who, once again, squirrels still have that posterior mane, unlike their sleek city cousins.

- Alie: And I imagine though, if they've kept the length on the scaly tail, it must serve a purpose in terms of, like, a sensory type of organ or for balance? Like, what are they using that tail for? 'Cause it's so long! [*laughing heebie-jeebies*]
- **Bobby:** I know, I know, but it serves them well, Alie! You know, if you look at, say, the roof rats of California, you know, they are experts at negotiating lines, and wires, and anything, you know, twigs and tree branches, because that particular rat evolves from around Vietnam where it's going up and down the forest jungle of vines, and trees, and this kind of thing. So, if you watch them do it, you will see they take that long tail and they wrap it around whatever they're climbing on. So, it gives them this stability for a very thin, you know, doing a tightrope act! So, the tail really serves all three species of the urban rodents very well in helping them when they need it to balance on very narrow surfaces, and wires, and so forth.

And the other thing the tail does that a lot of people may not realize is it's a thermoregulator. These are small mammals; they have a very high surface volume to low body mass. And on hot days, for example, these mammals can help regulate their body temperature by keeping the tail away from the body. And it's a large surface volume so it dissipates the body heat. And at least for those of us on the east coast here in temperate areas, when it's cold they'll take that tail and they'll put it below their body and sit on it, so to speak, so they don't lose that heat through the tail. So, it's a thermoregulating organ as much as it's balance and it gives them... sometimes they need to stand up on their haunches and they'll plant that tail out and it gives them an anchor from which to stand up without, you know, losing their balance and falling over.

- Alie: Ooh! I think it must startle humans because it just looks like such a long finger. You know? [*laughs*]
- **Bobby:** Yes! And the other thing you're alluding to, to some degree and since you're *Ologies*, you probably have done this a lot of the reasons we don't like this mammal, or people are fearful of it, or their disgust of it, is the other, sadly, animal we love to hate on the planet Earth are snakes. And so, a lot of people say, "Oh, the tail grosses me out! It's like they have a snake behind them." I'm like, "Oh my goodness, the rats can't win!"
  - Alie: [*laughs*] Oh! That's so true. It must just strike something where it's like, there's a snake made out of human skin attached to its butt and we just, like, freak out. [*laughs*] A finger snake on its butt.

Oh, we have so many good questions. I was going through this list and I was just like, "How am I going to pare this down?!" Jessica Flowers is a first-time question-asker and says: I've heard that rats have extremely strong teeth. What causes them to be so strong?

And someone else asked about their bite strength, comparing to a crocodile's. Do they have really strong jaws?

**Bobby:** They do! That's a great question. You know, the rodent... the word rodent, Alie, means 'to gnaw', which is different, by the way, than chewing. People say they chew on things. Well, scientifically, gnawing's one thing; chewing's another.

**Aside:** Okay, what's the difference? To gnaw is 'to bite' and to chew is 'to crush with molars'. Also, I didn't know where to mention this in this episode, but I read that rats can get through any hole the size of their heads because their ribs can collapse when they squeeze through things and then just spring back up on the other side. Anyway, back to their mouths! So, Jessica Flowers, first-time question-asker, you are about to hear exactly how strong rat teeth are. It's my gift to you.

**Bobby:** So, to gnaw on things, they're tools. So, they have these powerful incisors, upper and lower incisors that have no roots so they keep growing because they need them to gnaw into tree trunks and to get a rock out of the way or to, you know, climb. They will actually climb up a rock wall using their teeth like when we do rock climbing with picks and axes. So, they're very, very strong, as the questioner asked, they've been measured exerting pressures 7,000 pounds per square inch of pressure, which is tremendous. And I've been bitten once in a sewer where they got hold of my fingers. I thought my hand was in a vice, like someone was tightening. So, it's extremely powerful.

**Aside:** By contrast, a crocodile's weeny, limp bite force is 3,700 PSI, and gummy adult lions can only bite at 650 PSI. So, what's a human's bite force, you wonder? 126. So, we suck. You suck. We both suck. We are the lampreys of the mammal world, and we know this because there exists a thing called a gnathodynamometer, which is a device used to measure bite force. So yes, first time question asker Zoe Crankshaw, who has a rat living on their high-rise balcony. It did sort of climb up the walls like a tiny Spider-Man. But with its face. They don't even need radioactive material to give them superpowers. They just have evolution. And empanadas.

- **Bobby:** You know, they bite at six bites per second, so it's very fast. Very fast. And the whole thing of, when someone says rodent, what do people think about? Those two prominent teeth. When the camera takes a picture from the front side of this animal, those big, powerful incisors, uppers and lowers, just jutting out at you, you know, and that can really get your attention really fast.
  - Alie: Do you ever have to worry about anything communicable? We have a lot of different listeners, and I will say their names in an aside...

**Aside:** So, Patrons who asked about ratty infections were many, specifically: Ashley Emanuele, Dominic Lee, Alena Litin, Big Dr. Corrigan fan Derrick Allen, Juliebear, Maria Jouravleva, Alicia Penney, Kendra St Clair, Forrest Stotts, who also referred to rats' nests as MASSIVE CUDDLE PUDDLES?! And Patrons who were plagued with questions about a specific disease: Ryan Clark, Earl of Greymalkin, Baer Hodge–22, and Heidi Wright who wrote: Has anyone asked about the plague yet? Oh yes.

**Alie:** ...who asked about plague and hantavirus. Anything out there right now that people would be concerned about or is that something of the past?

**Bobby:** Well, another great question. You know, rodents in general hang out in these dirty places, right? Sewers, garbage, rotting, squalor; they run through the curbs and they're always involved with scavenging on all kinds of things. So any animal like that, that lives in the wild and occupies and visits, you know, filth and dirt, that's where our bacteria grow. That's where dangerous pathogens of different sorts are going to be found, if you will.

So, the problem is, with rats in cities, no matter... even if you are a millionaire and live in a beautiful millionaire home and this kind of thing, you're only as good as whether or not that garage door's rodent-proof because you can have a rat come out of the sewer right outside that estate and squeeze below a garage door and now trample all over your kitchen!

So, they have the potential to transmit viruses. We all know about COVID of course. Well, rats themselves have been found to carry novel viruses of all different sorts, including coronaviruses, but the good news is not *this* coronavirus.

Alie: Oh!

**Bobby:** Yeah, that's the good news. So far, we haven't found that. But there's research going on right now, by the way. But they do carry other diseases. Foodborne illness is a major disease where it's... we've all been there where you maybe eat something someday and you're sick for two days and you're vomiting and diarrhea. Those are usually caused by foodborne illness bacteria, like salmonella to give an example. They also, you know, carry a disease called leptospirosis, which we lost two people in New York City three years ago from rat-borne leptospirosis. So, they're public health pests, there's no doubt about that. They are public health pests. In Los Angeles, you probably know, just two years ago there was a typhus outbreak in downtown Los Angeles. I was out there looking at that situation. And so, you know, that's associated with rats.

**Aside:** What is leptospirosis? Well, I asked the Google and it's a bacterial infection of the blood and it's contracted from pee! Also, dogs can get it! There's also typhus outbreaks, equally no good. But wait, wait, wait! Don't you give up on rats, because they may not have even been to blame for plagues. Historians, in the last few years, are starting to look at disease models that point the finger to *human* lice and *human* fleas. So, rats, it is we who have done you dirty!

**Bobby:** The point is we need to keep in perspective, but there's two diseases we do not have to worry about with rats. One is plague.

Alie: Oh! Okay.

- **Bobby:** Even though they are associated historically with the plague of the medieval times, that's not going to happen anymore these days. And the other one is rabies. Everyone asks me if they get bit by a mouse or a rat, should they get rabies treatments, and the answer is no. You would never get rabies treatments for being bitten by any of the rats in the United States. They just do not align themselves with that particular virus. [*"I don't know her!"*] But other than that, there's about 55... 56 diseases, other diseases, that you just don't want to play disease lottery with these animals. [*Alie laughs*] Right? So, keep them out of your buildings and keep your garbage clean and you won't have to worry about it.
  - **Alie:** Jessica Friz and Jessie Dragon both want to know: What are your thoughts on the use of rodents as landmine sniffers, like the hero rats?

**Bobby:** Well, see, and that's a different species, you know. That's the Gambian pouched rat. That's a very cool, very cool rodent, as we all know. The landmine work, it's incredible what they do. And there's a great example of the utility of using rodents to help us in dramatic ways. So, I think it's a world of research, Alie, still waiting there as to the things we can use rodents for but have not thought about doing.

The Gambian pouched rat, the hero rat, is an example of, like, "Look, take that principle and maybe we can take city rats, as an example, and maybe we would be able to put them to work with some practical job and make them work for us to some degree and it would at least change the paradigm of 'they're all bad, they're all evil, they're all dangerous'." But we haven't begun to really test that animal in terms of its utility, but it has great potential, in my opinion.

- Alie: Yeah. They really deserve so much respect for being such generalists, and so adaptable, and just being smart enough to survive. I always feel this way about anyone who lives in New York anyway. I'm like, "If you can make it in New York, you can make it anywhere!" Same with the rats! It's not an easy city to live in. And it's like, if you can hack it there, respect, you know?
- **Bobby:** Yeah. You may be right. It'd be interesting to see who could tough it out more: LA rats or New York City rats.
  - Alie: I know!

**Aside:** Although there is a lot of pressure on LA rats to make their tails look thinner with contour and whisker extensions. It's brutal out here, man!

- **Alie:** Elle Hoffman had another question, first-time question-asker again: As a New Yorker, I've heard that the rats in the subway are actually the alpha rats because it's the best place to live, and the sidewalk rats are the weaker rats that can't cut it in the subway. Is there any truth to this?
- **Bobby:** Well, here's the thing, it's actually the opposite. There are rats in the subway and we did a four-year study of the rats in the subway, by the way and I can tell you that the subway is *not* a preferred habitat for the rats. When you think about it, it makes perfect sense. Even though you're down below ground and the tunnels are dark and everything, it's an environment that is difficult for a rat to find good nesting areas. The food isn't constantly abundant unless there's a really dirty subway. In the past it might've been, but these days they have sweeper trains, and they have advanced garbage collection processes, and the trains come by every two minutes; you've got to scurry away and so forth.

So the subways, they are there, they're everywhere, but it's not a preferred habitat. And the ones below the sidewalks – "upstairs," if you will – if they had the right sidewalk and they've found a small hole from which they can duck down into and come out at night and get to the garbage that's right on the curb, it's a much easier lifestyle.

- Alie: Oh, do they have to kind of fight for those different habitats? Or is it like "you were born into a nest that was above ground," lucky you?
- **Bobby:** Well, yes. It's just like us, right? The best real estate is usually a very well-protected nest, close by, good food that's very dependable night after night. So once that's located the rats start reproducing, and once they start reproducing, they say, "Look, food is always here, and it's close by the bed, and the bed is well protected. We are going to defend this to the end." That's the way it goes; real estate, real estate, real estate.

Alie: [laughs] I love the idea that it's just, "Location, location, location!"

Bobby: That's right. Sure is.

Alie: And I love this question. Alex Lai, Ira Gray, Bennett Gerber... a bunch of people including Rachel Noble asked: Has anyone ever done a study on different city subway rats to see if they've developed regional food preferences? Ira Gray says: Is it true that rats in different cities have different junk food preferences? Like when you bait traps, you have to use different foods depending on the region. Is that true??

# Bobby: It is true!

Alie: No! [laughs]

**Bobby:** Yes, it is. And in fact, some really great scientists out of Fordham University here, urban ecology scientists, they did some studies, and others as well where, let's just say, for 20 years your colonies have been foraging... We'll pick any ethnicity you wish...

**Aside:** So rats, as it turns out, sleep just 100-200 feet from their food source. Their commute is nothing! And in their whole life, they rarely travel more than 600 feet from their birthplace. Homebodies! Cozy! So, let's say you're a rat growing up near really good dim sum, and your mom's milk tastes a little like dim sum. It's your favorite, dude!

- **Bobby:** Let's say you go five miles uptown and all of a sudden you're in a European neighborhood where it's European-style foods or whatever it may be. Whether it's Italy...
  - Alie: [exaggerated Italian accent] Marinara sauce, it's a-spaghetti a-meatballs! [laughs]
- **Bobby:** Exactly! [*laughs*] That's right, Prince Spaghetti Day! So, cities will have things that we... Some people will say this, right? We joked earlier, "Oh, New York City has the best pizza." Well, what's the food favorites of LA, or St. Louis, or Chicago? And those rodents that have spent 40, 50 years in those areas? Yes, they're probably going to have those food dialects established within their biology.

Alie: How long does the city rat live, by the way? I forgot to ask that.

Bobby: Most, under average conditions, Alie, they're lucky if they get a full year. They're very lucky if they get a year. Most live nine months, ten months. Occasionally, just like us, you'll find... People bring me to these rats that look like, "Oh my goodness, they've been through a war!" [*clip from the Sopranos: Silvio Dante, "You look like shit."*] Some of the dominants will get a year and a half, two years, but it's a hard life to be a wild rat in the city. It's a hard life.

Aside: You know what's hard? Breakups. And a lot of you wanted relationship advice from Bobby, including: Jacquelyn, Hanna Vaughan, Jaime Jensen, Daniel Zaldana, Paul Cirillo, Uri Katz, Julia Zafiropoulos who is a first-time question-asker, Jess Swann, Alana Yoel, Elizabeth Edwards, Nicole Howley, Hilary Larson, Rare Press, Joy Sanchez, and Melanie Lee. Jayden Aubryn says: I saw a rat dying from chemicals and wanted to cuddle it because it looked so sad and sick. PS. I did not cuddle the dying rat. (Well done, Jayden). Patron Dylan McGuire asked: How do you exterminate/trap rodents on an industrial scale? Hand grenades? Flame throwers? So, a lot of trapping and humane-based inquiries, naturally.

Alie: I feel like one question is on so many listeners' minds. Hilary Larson asks: How do you feel about mousetraps? Rare Press says: What's the most humane way to trap and remove a house mouse? So many people say they respect them, but they don't want them, for example... [chuckles] So many people asked about toilet rats. Is it possible that a rodent can

get into your house via the toilet? Essentially, what can you do if you don't want the rat in your house? What's the best way to get rid of it?

**Bobby:** I would say, because that question touches upon... it's back to *Ratatouille*. I believe we need to be humane with these animals, even though they can carry a disease, they can hurt us, they can burn our buildings down by gnawing wires. Nevertheless, we're smart enough to do this so that we don't have to resort to traps that capture them by the legs or by the head and some of these barbaric means and this kind of thing. So, the best way to be humane to this animal and also control it so it doesn't get close to you is, if they're trying to get into your house, either through a toilet bowl, or through the doors, or through a hole, it's because they want to get to either harborage or food.

The toilet bowl thing is... it's not rare, but it's not that common. [*Alie laughs*] So if a rat was to come up through the toilets, which they do occasionally, that's something the city needs to be told. They need to inspect their sewer lines and take care of that, which they can. But every person that may be involved in *Ologies* here in Question and Answer, it is not difficult to do your garbage correctly. It is not difficult to keep your doors well sealed and close to the floor. It's not difficult just to not attract them to your property in the first place so then you have to do something like trap them or poison them.

- Alie: And hopefully you don't have a neighbor who is just surrounded by take-out containers. [*laughs*]
- Bobby: There's the rub, isn't it? We're only as good as the worst neighbor on our block, aren't we?
  - Alie: Which I think, in an urban environment, yeah, you just kind of don't know what's going on behind the wall next to you. As someone who lived in a duplex that had cockroaches, it turns out the neighbor below us...

**Aside:** Ah yes. Just as cream rises to the top, so do roaches and rats to the second floor. This was also the same duplex in LA where our furnace blew out so much carbon monoxide, that when it also caught fire, the repair person told us in earnest that my roommates and I should have a party to celebrate that we did not die from it. The landlord, who was a heinous, toilet-hearted garbage person, also tried to keep our security deposit because the house had termites. Go figure!

But speaking of toilet people, let's get back to a great question, which was asked by myself and Patrons Courtney R, Catherine Galparsoro, Nicole Howley, Meagan Walker, and Emily H.

- **Alie:** This is one question I've always wanted to know: Toilet rats, how are they holding their breath to get through the actual toilet?
- **Bobby:** You know, rats are great swimmers. In fact, outstanding swimmers. And so getting up the toilet from the sewer and going against the current, so to speak, is no problem. They can hold their breath for 3-3½ minutes. And that tail helps them. I watch rats fish in the Hudson River. Literally jump in the river, fish around, swim, capture little fishes and come back up and eat them on the rocks. [*clip from Friends: "There was a seafood buffet you wouldn't believe."*] So they get up the toilets, not difficult whatsoever. They can stay afloat. The research I've seen on this was you can put a rat in a big tub with nothing to rest on and they will be able to stay like that for 3 days of treading water. So they're great swimmers.
  - **Alie:** And I imagine Pizza Rat must've been a thrilling triumph for rats and rodentologists everywhere, but what's the weirdest thing you've ever seen a rat eating?

**Bobby:** Well, you know, they eat everything. But for me, the Pizza Rat thing didn't surprise me all that much, even though it's cool and it has a cool schtick to it, right? Pizza Rat! It just sounds cool. But I watched a rat run down Fifth Avenue one night, years ago... and in New York, I don't know if it is in LA, but we have these giant pretzels [*Alie laughs*] you can buy from the pretzel guy. I mean, they're as big as... they're huge things! We usually break them up and tear them apart. We eat them in pieces.

But here's this rat running down Fifth Avenue with a whole pretzel! He's bumping into things, he was hitting the walls, he was hitting the garbage cans with it. [*Alie laughing hysterically*] He just wanted to get it home. So I was like, "Somebody should do Pretzel Rat. It's much better."

- Alie: [*laughing hard*] Oh I'm so happy for that rat! What a score! Imagine if you had a calzone as big as you, and you were just running through the streets with it.
- Bobby: The question is, did he go back for the mustard? [Bobby and Alie laugh] That's the question.

Alie: "Salt or no salt?" [*laughs*]

- Bobby: Yeah exactly! "Salt or no salt?"
  - Alie: It's amazing. In all of your work, being a rodentologist, sleeping in barns to get your PhD, there must be something that is tough about it. What's the hardest thing about being an urban rodentologist?
- **Bobby:** Well, as much as I'm hired to design programs to manage these rats in cities, the hardest part is that rats are a problem only because we, as a species... We're supposed to be the smartest thing on this planet. I always tell people our name is *Homo sapiens*, right? But how sapient are we? Here we allow our refuse to get away from us, and we plastic the ocean up, and all these kinds of things. And so the saddest part for me, the hardest part of my job is I'm constantly looking at situations, Alie, where they say, "Yeah, we have a lot of rats in this part of the city." And for me, I'm like, "What's sad is *we* are the reason for this city having a lot of rats, not the rats. They're just doing what they need to do."

So it's this constant, sometimes, downer to see like, "Oh my god, we should behave much better than we're doing." And we wouldn't have to then go after these rats with these horrible poisons and stuff. The rat's super cool, and on its own, if I'm in the woods and it's not disturbing anybody, and I see a rat living in the wild, I'm like, "Bravo, bravo! You're a great, great species."

Aside: Bravo rats, we gotta hand it to you!

- Alie: What about your favorite thing about rats? I know that's so hard because they're so cool! And they have hands! I mean, they're tiny little mammals with hands! Where do you start?
- **Bobby:** I know, I know. I think the coolest thing that I love about the animals is... and it is back to my barns where I learned this, when I stayed in there with these rats night after night, just taking notes and watching them and laying on the floor and this kind of thing, they are very, very much like us. And we already know that since we gained so much from them in medical research, but I was able to watch rats be kind to each other.

I watched rats bring each other gifts of food and just drop it there and walk away, which I said, "That had to be kind of a fluke. They couldn't have done that on purpose." Well, now we know they do. They have altruism, they give to each other. They have bad moods, like you mentioned earlier. They laugh, they tickle, they have joy. So the best part is, they're

very super cool mammals, and look how successful they are! You wouldn't be that successful unless you were great at what you do, right? You probably take a lot of pride in your work with *Ologies*. I take pride in my work as a rodentologist. We try to be good at what we do. Well, the rat's like, "Yep. Been there, done that."

Alie: [*sniffles*] You just made me start crying thinking of them giving each other presents! It's so cute! That's so nice! They're just trying to live! Oh my goodness. You know, a lot of people are also saying there's a *Ratatouille* musical that they're trying to make on TikTok, and Sara Hunt wants to know: Would you ever be interested in being a science consultant for rodent-themed entertainment?

Bobby: You bet. Sign me up! That sounds fabulous!

Alie: We've got to get you a TikTok account. Are you on there yet?

Bobby: I am not. [Alie laughs] I'm embarrassed to say, I'm not on that.

Alie: Me neither! If I figure out TikTok I will let you know how it works.

**Bobby:** Thank you. I need the help, believe me. Well, thank you, Alie. Again, it was very cool. When I saw *Ologies* for the first time on Twitter, I said, "How cool is this??" So I followed in half a second. I was just following you.

Alie: Well, I mean, you also have the handle @Rodentologist. That's so amazing!

Bobby: Yeah. People say, "Is there really such a thing?" I said, "I hope so, I am one!"

Alie: [fading volume] That's so great. Oh my gosh.

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So, ask knowledgeable experts squeaky questions because life is short, we're all gonna die, and rats are smart, and the answers might just make you weep in front of a stranger. You can find Dr. Robert Corrigan, aka "please just call me Bobby," on <u>Twitter</u>, @Rodentologist. He has the handle!

I will link to his handle as well as the charity, and the sponsors will be linked in the show notes. I'm @AlieWard on <u>Twitter</u> and <u>Instagram</u>. Do say hi and follow there. *Ologies* is <u>@Ologies</u> on <u>both</u>. You can become a patron of the show for a teeny, tiny little dollar a month and submit questions; that's <u>Patreon.com/Ologies</u>. *Ologies* merch, including face masks, is available at <u>OlogiesMerch.com</u>, and that's managed by Shannon Feltus and Boni Dutch, two sisters who host *You Are That*, which is a comedy podcast. They recently had the Drs. Erin on from the Epidemiology episode and from *This Podcast Will Kill You*, so check out *You Are That*.

Thank you, Erin Talbert, for adminning the *Ologies* podcast <u>Facebook group</u> so beautifully. Thank you, Emily White and the big group of transcribers, for making transcripts available for free. The link to them is in the show notes. There are also bleeped episodes available for free at that link. Thank you, Caleb Patton, for doing the bleeping. Thank you, Noel Dilworth for lining up the interviews and being like my second brain. And to assistant editor Jarrett Sleeper who is no longer my boyfriend, but we will address that in the secret at the end of the show. Thank you, of course, to Steven Ray Morris who puts the show together every week. He also hosts *The Purrcast* and *See Jurassic Right*, two podcasts about cats and dinos, respectively. Nick Thorburn wrote the theme music and he's in a band called Islands, a very good band.

If you stick around until the end of the episode you know I share a secret. And [*whispers*] I'm getting nervous! I've been sitting on this news for several weeks because with the holidays and then, you know, just a little bit of chaos in Washington, it just didn't seem like a good time to go public. But

Jarrett Sleeper and I have been really enamored of each other for almost a decade, but he is no longer my boyfriend.

He is my *fianceeeee*! I have sweaty palms telling you! So yes, we did not break up, we're en-ga-jed! That's right, the man who wears wigs and short shorts to make quarantine workout videos, and who is an excellent cook, and poet, and friend, and an ally for justice, just my ride or die. [*southern twang*] That ole' handsome goober done give me a special gem! And I am very, very lucky to have found him, your hairy PodMom. Or stepmom? I dunno, we'll figure that out. Go enjoy a snack in your preferred food dialect. I dunno, cut bangs, text your crush. You never know what might happen. Except that we'll all die and then our molecules can turn into frogs or a cactus and that's cool too. Love y'all. Berbye.

Transcribed by: Mara Spensieri Wendy Fick Emily White

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