**Nate Hegyi: Checking. One, two.**

**Taylor Quimby: Good morning, Mr. Hegyi.**

**Nate Hegyi: Good morning. I wanted to be recording right away, so, you know.**

**Taylor Quimby: All right. So. Ready? Yeah?**

**Nate Hegyi: Yes.**

**Taylor Quimby: Okay.**

**Nate Hegyi: Yep. Yeah.**

***Movie clip:*** *It turns day into night. Air into fire.*

**Taylor Quimby: So I grew up in the 90s.**

**Me too.**

**Taylor Quimby: This is the golden age of disaster movies.**

**Nate Hegyi: Oh, hell, yeah. Dante's Peak. Volcano.**

*A volcano is turning nature into a nightmare.*

**Taylor Quimby: I can't believe you mentioned Dante's Peak. It's one of my favorites.**

**Nate Hegyi: It's great when the. I mean, it's not great, but when they, uh, the grandma boils — boils in the lake. I remember being horrified by that when I was a little kid.**

**Taylor Quimby: One of the things I love about these movies is they tell you exactly what you're going to get in the title, like Volcano Firestorm. Twister. It's literally just the name of the disaster you're going to witness.**

***Movie clip:*** *It's not going to drop anywhere near. It's going to drop right on us. No, no. Go back.*

**Taylor Quimby: But as I've gotten older, I have started to, like, think back and wonder, like, what is the appeal? Why is it that we want to watch these horrible events unfold?**

***Michael Benton:*** *I suppose people want to think about the worst that could ever happen. They feel of course there is an element of science in all the disaster movies. There’s also an advisor who tries to explain what’s happening.*

**Taylor Quimby: So this is a guy obviously, this is a—**

**Nate Hegyi: This is a person.**

**Taylor Quimby: This is a human. This is a paleontologist named Mike Benton.**

***Michael Benton:*** *And yes, I think you're right. There is a sense of awe. The scale of it. We know we're powerless. And even the most amazing technologies wouldn't necessarily protect us in, in some of these terrible circumstances.*

**So the reason I called up this guy, Nate … is because he specializes in the BIGGEST disasters there are: which are mass extinction events. We’re talking true stories from Earth’s past: of asteroids, catastrophic climate change, super volcanoes…**

***Michael Benton:*** *And it could happen tomorrow. You know, we're not this is not something otherworldly. This is something that could be immediate.*

**Taylor Quimby: So so here's the deal, Nate. This right here is our 250th episode.**

**Nate Hegyi: Oh, what a great way to enter into our 250th episode, Taylor.**

**Taylor Quimby: Yeah, well, what I was thinking is that for this historic moment, I would like to offer up a little perspective, right? So rather than engage in some kind of like, cliched clip show where we play favorite, you know, moments from the past.**

**Nate Hegyi: Yeah.**

**Taylor Quimby: I want to tell you, the greatest and most terrible disaster story in all of Earth's history.**

**Nate Hegyi: Ooh.**

**Taylor Quimby: Technically, this is called the Permian-triassic extinction event, but the more poetic scientists out there refer to it by another name. They call it the Great dying.**

**Nate Hegyi:The great dying.**

**Taylor Quimby: Yeah.**

**Nate Hegyi: That sounds depressing.**

**Taylor Quimby: Sounds like it could be a movie, right?**

**Nate Hegyi: No one would title their Hollywood blockbuster disaster movie, *The Great Dying*.**

**Taylor Quimby: Well…**

**Nate Hegyi: That's like fall Oscar fare in like a that's like the road, you know, like, that's not that's not deep impact.**

[music fades]

**Taylor Quimby: So let me set the scene.**

**Nate Hegyi: Okay.**

**Taylor Quimby: We are 250 million years in the past about.**

**Nate Hegyi: Oh, apt, apt.**

**Taylor Quimby: Yeah, you get it. 250.**

**Nate Hegyi: 250? Yeah. I get it now.**

**Taylor Quimby: This is way before the dinosaurs. During an age of super bizarre creatures, you have likely never heard of or seen.**

***Michael Benton:*** *Biggest creatures that you would have seen in front of you were the Pareiasaurs.*

**Nate Hegyi: The Pareiasaurs.**

**Taylor Quimby: Imagine a hippopotamus mates with an iguana.**

***Michael Benton:*** *Big, blobby creatures with short legs.*

**Nate Hegyi: How big are we talking? Like the size of a hippo.**

**Taylor Quimby: Yes.**

**Nate Hegyi: Whoa.**

***Michael Benton:*** *And they were preyed upon by saber toothed reptiles.*

**Taylor Quimby: These beasts were called Gorgonopsians.**

**Nate Hegyi: That's a great name.**

***Michael Benton:*** *They had teeth that were maybe five, six inches long.*

**Nate Hegyi: Wow. This sounds like an eight year old's drawing.**

**Taylor Quimby: That's what I'm saying. Like it's a it is a different world.**

**Nate Hegyi: Yeah. We haven't seen this movie.**

**Taylor Quimby: Now, it's not just the animals that are unusual. The shape of this world is super different from what it is today. The Atlantic Ocean is shut. Europe, North America, Africa. South America. They are joined together. Fused.**

***Michael Benton:*** *All the continents were fuzed as a single supercontinent called Pangaea, which extended more or less from the northern hemisphere to the southern hemisphere. So land living creatures and plants could kind of move everywhere. And it wasn't just a single continent. The range of temperatures from the equator to the pole were much reduced compared to today. There was no polar ice cap. And we know that from measurements in the rocks where we can assess the temperatures and from the fossils. We can show that the same plants and animals are pretty much living everywhere.*

**Nate Hegyi: So it was just steamy, hot, humid Pangaea.**

**Taylor Quimby: Yes.**

***Michael Benton:*** *And there was no sign of any problem on the horizon.*

**Nate Hegyi: Until. “In a world.”**

**Taylor Quimby: In the movies, you know, this is also where, like, I don't know if it would be a cartoon or what, but, you know, like one of the gorgonopsians would like run up and shuffling a bunch of papers and be like, “Uh, listen, there's something happening and I think you should know about it.”**

**Nate Hegyi: And he'd be telling that to, like some sort of a hippopotamus iguana general who would be, like, dismissive of him. Yeah, that's not it.**

**Taylor Quimby: Everything's fine.**

**Nate Hegyi: You got Morgan Freeman playing a playing one of the hippopotamus iguanas.**

**Taylor Quimby: So if I could break the flow for a second. The truth about these mass extinctions is that we know they happened because of fossil evidence, but actually explaining how they happened is a lot trickier. Um,**

**Nate Hegyi: I mean, it makes sense to me how hard it would be to decide how an entire ecosystem of species was wiped off the Earth.**

**Taylor Quimby: One thing we can say for sure is that 250 million years ago, there was a volcanic eruption in what is now Russia**. **And today, we call this vast area of volcanic rock… the Siberian traps.**

***Michael Benton:*** *Current estimates for the the, the, the scale of the eruptions are way beyond anything that we know today. People talk about billions of cubic kilometers of lava.*

***Taylor Quimby:*** *What would that even I have no concept of what that would be like. Are we talking about the size of Rhode Island kind of thing?*

***Michael Benton:*** *Bigger than Rhode Island. It would kind of cover a third of Canada. It would probably cover all the eastern provinces of Canada right up to the Great Lakes. And it's not a — it's not a chance estimate because, of course, the lava is there. It's preserved and it's been mapped.*

**Nate Hegyi: This guy should definitely be in a disaster movie, by the way. His voice is perfect.**

**Taylor Quimby: FYI, this would not have been one of those Mount Saint Helens or Vesuvius types of eruptions where the whole cone of a mountain blows off. This would have been what's called a fissure eruption.**

***Michael Benton:*** *Great cracks open up. And this can really be seen in Iceland today. And they're not always active. You know, the crack is there. But when it becomes active, the amount of lava being spewed out is huge.*

**Taylor Quimby: So we are talking about hell opening up on earth. Lava pouring out like the world's biggest rivers, all overflowing their banks. We are talking about everything in the immediate vicinity burning, choking to death.**

**Nate Hegyi: Jeez, Taylor, that's intense.**

**Taylor Quimby: Well, I'm trying to transmit the drama here.**

**Nate Hegyi: No, you're. You're talking it up. I'm. I'm riveted. Continue.**

**Taylor Quimby: Um. But as is often the case with volcanoes, right, it's the ash pouring out of these cracks that spreads across the globe.**

***Michael Benton:*** *And so the zone of effect was worldwide. And we know that for sure, because ash deposits and other indicators of the gaseous outpourings have been picked up pretty much worldwide.*

**Taylor Quimby: And it's not just ash, it's also toxic gases - like sulfur dioxide.**

***Michael Benton:*** *They, they come quickly, they impact on the atmosphere very quickly, and they cause freezing cooling.*

**Taylor Quimby: So first there was likely a regional, maybe global cold snap… And then came the rain.**

***Michael Benton:*** *If you think of the sulfur dioxide, which has the cooling effect, mix sulfur dioxide with water and you've got sulfuric acid. That's battery acid.*

**Nate Hegyi: Battery acid rain?**

**Taylor Quimby: Yeah. So so, you know, we have a sense of acid rain and it's not good.**

**Nate Hegyi: Yeah.**

**Taylor Quimby: This acid rain would be literally more like acid.**

**Nate Hegyi: Oh, my God. Those poor iguana hippos.**

**Taylor Quimby: This. Yeah, This is the kind of rain that could erode limestone over time. But imagine what it's going to do, certainly to the animals, but even more so to the ferns and to the trees.**

**Nate Hegyi: Right. This is nightmarish.**

**Taylor Quimby: Yeah. Another emission that comes from the traps, a group of elements called halogens. This includes iodine and bromine. These are the sort of things we use in halogen lamps. Guess what they do?**

**Nate Hegyi: Uh, they just gently light the area in a way that, you know, is just. It's just, nice.**

**Taylor Quimby: It illuminates. It illuminates the apocalypse nicely in.**

**Nate Hegyi: A warm glow.**

**Taylor Quimby: No, no. What they did was they literally destroyed the ozone. So you remember the hole in the ozone layer? Well, this is like no ozone layer. So during this true disaster story of the Great Dying, the entire ozone layer was pretty much destroyed.**

**Nate Hegyi: You always tell us with Outside/In episodes that we're supposed to be like bringing joy and like, just like excitement and everything else like that to our to our listeners. I feel like for our 250th episode, this is, hands down, takes the cake. The most darkest, depressing story I've heard in a while. Continue.**

**Taylor Quimby: Well t's like it's like, if you're going to talk about doomsday scenario, let's talk about the doomsday scenario. You know what I mean? Like, let's not pull any punches. This is as bad as it gets.**

**Nate Hegyi: This is the one. Okay, continue. Continue with this hell.**

**Taylor Quimby: But but then after this cooling, all this stuff, then comes, you guessed it, the global warming.**

**Nate Hegyi: Hmmmm.**

**Taylor Quimby: So cooling first. Then the planet gets hot because the other emissions from the Siberian traps would have been just massive amounts of CO2 and water vapor. Scientists think that the atmospheric carbon went from a little over 400 parts per million, which is actually where it is about for us now to six times that much.**

**Nate Hegyi: Wow.**

**Taylor Quimby: This past July, you know, we broke all sorts of records for heat, right? Right. Do you know what the global average temperature was this July?**

**Nate Hegyi: I don't. Not off the top of my head.**

**Taylor Quimby: So it was about 63°F.**

**Nate Hegyi: That doesn't sound that hot, actually.**

**Taylor Quimby: Right? Because it's a global average temperature. So you're averaging in the temperature at the North Pole, the equator, you know, Montana, New Hampshire, that’s all getting averaged together.**

**Nate Hegyi: Okay.**

**Taylor Quimby: During the great dying, the global average temperatures were over 95 degrees.**

**Nate Hegyi: Whoa.**

***Michael Benton:*** *So effectively, the net result of all of this crisis on land was that forests were wiped out.*

**Taylor Quimby: So you know how we know this, Nate? This is kind of cool.**

**Nate Hegyi: Okay.**

**Taylor Quimby: Um. I'll give you a hint. What do dead plants turn into after millions of years?**

**Nate Hegyi: Coal?**

**Taylor Quimby: Coal!**

**Nate Hegyi: Fossil. Fossil fuels.**

**Taylor Quimby: Fossil fuels. Right.**

***Michael Benton:*** *People noted years ago a so-called coal gap. And there's a coal gap of 10 or 15 million years in the early Triassic. No coal at all. Forests had gone.*

**Nate Hegyi: So this whole coal gap is how we know that there were no forests during this great dying.**

**Taylor Quimby: Yeah. Ironically, it's our love for fossil fuels that has helped us discover this. This particular time.**

**Nate Hegyi: Of great climate change.**

**Taylor Quimby: Yeah.**

***Michael Benton:*** *And it seems that at one point on land, at least, the killing of the forests had a second effect that we might not first think of. If you kill the trees, you remove the trees. As they are removed, the soil goes with them because of course, it's the roots of the trees that stabilize the soil over the landscape.*

**Taylor Quimby: So you've seen an eroded trail?**

**Nate Hegyi: Yeah. This is just an eroded earth.**

***Michael Benton:*** *It went from the sort of soil covered lush landscape we know with slow moving, meandering rivers to a kind of crisis landscape of rocks only.*

**Nate Hegyi: Mmm. A crisis landscape, indeed.**

***Michael Benton:*** *And it really took thousands, maybe millions of years for the subtlety. Yeah. The kind of softness and subtlety of the landscape to rebuild itself.*

**Taylor Quimby: I think, you know the thing about disaster movies. Part of part of what makes them enjoyable is that, um, you know, like you are safe. And you can imagine that it could happen to you. But like, really, it's only going to happen to someone else is the very privileged way that you think sitting in a movie theater.**

**Nate Hegyi: Yep, absolutely.**

**Taylor Quimby: And the messed up thing about this is that, like, when you're looking at disasters at this apocalyptic scale, it's like this happens to everybody.**

**Nate Hegyi: Yeah, you never see that, even like, I think there's like a couple of movies where, like, the asteroid literally destroys the world. That recent one with Leonardo DiCaprio comes to mind.**

***Dr. Randall Mindy [played by Leonardo DiCaprio]:*** *And the reason why we know that there is a comet is because we saw it. We saw it with our own eyes, using a telescope. I mean, for God’s sake, we took a fucking picture of it! What other proof do we need?*

**But like most of the time, it's like asteroid hits and it's bad, but like, the cool family survives.**

**Taylor Quimby: Well, actually, I think that this goes to show you that, like, disaster movies have changed. And because of climate change, they're like bigger and stupider than they've ever been before because, yeah, like, we still have to have plausible deniability. So geostorm and whatever. Moonfall like the moon is like — those things are just so big and dumb that it doesn't give me climate anxiety.**

**Nate Hegyi: Literally, the moon gets sucked into the earth. Great idea. I love that stuff.**

*The moon is rising. Gravity is going to go crazy.*

**Taylor Quimby: But II think it does tell you that, like the old style of disaster movie — It's more uncomfortable now. And I think that's because, A, with climate change, you know, disasters are feeling more commonplace.**

**Nate Hegyi: Mhm.**

**Taylor Quimby: B you can watch them all the time because of YouTube and iPhone cameras. Like you can really go down the rabbit hole if you want to. And C, unlike Hollywood movies, these are real people, you know, running away from destruction. Right. These aren't B-list celebrities.**

**Nate Hegyi: And we've gone through a global pandemic recently. We've gone through these — with climate change — these tremors of like, oh, my God, like disasters [knocking] actually right outside our door.**

**Taylor Quimby: Yeah. Well, back to my story, because we haven't even talked about what happened to the oceans yet.**

**Nate Hegyi: Oh, no. Okay. All right. Continue. I feel like if there was someone giving you script notes, they would be like, I don't know if the movie needs a whole ten minute scene on what the hell happens to the ocean.**

**Taylor Quimby: Well, we don't. We don't have, like, a Pierce Brosnan to play like a sexy gorgonopsian who's going to, you know, who's, like, driving his F-150 away from the exploding Siberian traps?**

**Nate Hegyi: Yeah, we definitely needed to have a hero gorgonopsian. A Pierce Brosnan.**

*These are just precautionary measures. We don’t to start a…*

*Ladies and gentlemen, please remain calm, please…*

**Taylor Quimby: Okay, so compromise - why don’t we take a time-out real quick. We’re gonna take a break, and do please come back because there is a sort of happy ending to this story, and some other stuff we want to tell you about.**

**[BREAK]**

**Nate Hegyi: Hey, this is Nate Hegyi. You're listening to Outside/In. It is our 250th episode.**

**Taylor Quimby: Woohoo!**

**Taylor wants me to go. Huzzah! I don't. I've never said huzzah. I've. Nobody says. Huzzah**

**Taylor Quimby: Read the script. Nate, Read the script.**

**Nate Hegyi: Anyways, continue with your depressing story, Taylor. Okay.**

**Taylor Quimby: Thank you. And for this little section I want. I want you to humor me. Could you really quickly google the Guadalupe Mountains of Texas? I don't need to Google them.**

**Nate Hegyi: I know them. Oh, yeah, I can describe them. They kind of rise out of the desert. Almost like castle-like surrounded by Yucca.**

**Taylor Quimby: Yeah. Now, how do you think those formed?**

**Nate Hegyi: I'm going to guess this is the smushing of — well, no, because it's not a huge ridge. Oh, that's a volcano. An old volcano.**

**Taylor Quimby: A totally respectable guess given the subject matter. But this was a red herring, because what you are looking at are the eroded remnants of an ancient coral reef.**

**Nate Hegyi: Really?**

**Taylor Quimby: at this stage during the late Permian, Texas was under the ocean.**

**Nate Hegyi: That's cool.**

***Michael Benton:*** *These Guadalupe Mountain reefs were big. These huge structures which like today, would have been visible from outer space.*

**Nate Hegyi: You know, this makes sense because right near the Guadalupe Mountains is the Permian Basin. Yes.**

**Taylor Quimby: Yes. And the area around those mountains would be teeming with all of this life.**

***Michael Benton:*** *Mollusks and other kinds of shellfish, snails and other things creeping amongst them, looking for food and above them, a diversity of unfamiliar looking fishes.*

**Taylor Quimby: So what happened to those coral reefs 250 million years ago? Well, um, all that acid rain first poured into the waves. And we, we talk a lot about ocean acidification now. The creatures that suffer first are all these shelled animals swimming around. And there's a very good reason for that.**

***Michael Benton:*** *They all struggle because their shells are made of calcium carbonate and the acid simply eats it away. So but on top of that, all of the soil — this is sort of building disaster upon disaster — all of that soil and plant debris is kind of being washed into the oceans sporadically stripping the surface of the land. But it also clogs the feeding apparatus of a lot of the corals and other seabed organisms, because a lot of the richness of a coral reef is based around the corals and other colonial creatures that are sitting there passively. They don't move around. They they capture their food from the clear ocean water that flows by.*

**Taylor Quimby: So you could almost think of this as like, uh, you know, agricultural runoff in the very worst and most dramatic fashion.**

**Nate Hegyi: Yeah.**

**Taylor Quimby: And then, you know, again, another thing that we're talking about a lot today, ocean warming. The oceans are built on these cycles of warm and cold water flowing up and down in the water column that refreshes and circulates food, but also, more importantly, it dissolves oxygen and then moves it about the ocean.**

***Michael Benton:*** *And if you, if you stop that normal cycling, the oceans become, to an extent stagnant.*

**Taylor Quimby: You ever — you ever seen a photo of a big fish kill?**

**Nate Hegyi: It's just like a, yeah, it's just a silver just horizon of dead fish. It's — it's really sad.**

**Taylor Quimby: So we can imagine that happening at this worldwide scale. And much like the coal gap in the oceans, we see a kind of coral gap.**

**Nate Hegyi: Hmm.**

**Taylor Quimby: There's a sudden stoppage in the development of ocean life and a layer of death across. The geological record.**

**[**music builds and fades]

**Taylor Quimby: All told, the loss of life across the world - on land AND in the water - was unimaginable.**

***Michael Benton:*** *It looks as if the survivors represent only 5%. 1 in 20 of species survive both in land — on land and in the oceans. Even those 5% of species that survive, they were probably heavily hit. So the number of individual organisms, maybe their geographic spread perhaps were catastrophically cut back. And so if we were looking at biomass, it might have gone down to 1% or even less.*

[guitar lightly strums]

*For the first time for billions of years since the early stages, early in the origin of life, you're kind of turning the clock back. You're expunging hundreds of millions of years of history and life has to kind of start up again. It's not quite analogous because there were, here and there, rare survivors of complex life forms, of course. So it's not a total return to the origin of life. But the world must have felt strangely alien.*

**Nate Hegyi: Give me the time span of this real quick? Like are we because I'm imagining this and happening in like a couple of weeks, but what's the time span of this, this volcanic eruption and giant climate changing event?**

**Taylor Quimby: You know, the short answer is we don't know exactly.**

**Nate Hegyi: Okay.**

**There would have been aspects that were catastrophic and sudden, like a disaster movie - but ultimately, this is a disaster that took place over a much, much longer time period than you or I can probably grasp.**

***Michael Benton:*** *I think it's now widely accepted that it wasn't just one pulse of massive eruption. There were 2 or 3 events separated by maybe 60 to 100,000 years.. And you can actually see the species that disappear with number one, and then some new species appear. Then there's another killing, new species, another killing. So it seems there are several pulses and it's kind of debated at the moment, how many.*

**Nate Hegyi: So I want to know about these critters that survived, because you've painted a hellscape that you would only see at like the seventh ring of Dante's Inferno or whatever.**

**Taylor Quimby: [Laughs]. Yeah.**

**Nate Hegyi: So who survived this great dying?**

**Taylor Quimby: So first what you'd have is the entire continent colonized by mushrooms.**

**Nate Hegyi: Wow.**

**Nate Hegyi: Just, you know, when you see, like, in in the hills in England, and they're just like these beautiful grassy hills.**

**Nate Hegyi: Yeah.**

**Taylor Quimby: Imagine, like, just mushrooms and ferns across everything.**

**Nate Hegyi: The rolling hills of mushrooms.**

**Taylor Quimby: A fungi world.**

**Nate Hegyi: Yeah.**

**Taylor Quimby: And then, you know, things did start to come back. And the survivors, it's everything. Like, look outside. Every animal you've ever seen. Today, its ancestors survived the Permian extinction.**

***Michael Benton:*** *Turtles and crocodiles, [sound effect] as well as the the Dinosaurian ancestors of birds [sound effect] and ancestors of mammals [sound effect] and indeed ancestors of many modern groups of insects, [sound effect] flies and butterflies. And people have even dubbed this this changeover as a kind of gourmet's paradise, because all the seafood we love eating,*

***Taylor Quimby:*** *[Laughs.]*

***Michael Benton:*** *The shrimps and lobsters and crabs, they all more or less originate at that time.*

**Nate Hegyi: I think that's what's most amazing to me right now is just like I'm looking at my window at what was at one point Pangaea, and we have an ozone layer, there's grass, there's all these other things, you know, like just the ability of the planet to rebound is quite extraordinary.**

**Taylor Quimby: It is.**

**Nate Hegyi: As I've said many times on this show: Life. We'll find a way.**

**Taylor Quimby: I knew it as soon as, as soon as you paused. I knew that's what was going to come out of your mouth.**

**Nate Hegyi: [Laughs.]**

***Michael Benton:*** *That's a result of clearing out the world so we can say, Oh yeah, that's great. So there is a kind of positive aspect, but it took a long time. So we mustn't make a moral story from this and say extinction is good. We'd be gone.*

***Taylor Quimby:*** *Again, I don't I don't want to. And you've mentioned this a couple of times. I think it's important not to come up with a silver lining for extinctions in some way. You know, stories like this, you've talked about it. There's a sense of powerlessness in the face of, uh planetary events at this scale. But we also know we do have agency in our lives to mitigate and have an impact on our climate. And you as a paleontologist, I just wonder how you how you, I don't know, um, square those two things.*

***Michael Benton:*** *I think you've, you've put it very well. I think that we do have agency, but we have to be humble. We we we don't have total agency, I suspect. Um, yes, I think it is very much a mixed message. And that's something we do learn from the deep past.*

[music builds]

***Michael Benton:*** *We have to remember the timescale of life recovers, but it's not a reason to be complacent.*

[music continues]

**Taylor Quimby: So.. I know that looking back at this kind of thing could be seen as depressing, and that’s the risk — just like a lot of doomish climate change coverage — it can make people feel apathetic.**

**But I think that these stories — and this story in particular — is one that should give us a sense of wonder about the fact that we're here at all.**

**Like the fact that all these mass extinctions have led the planet that we know today to this moment, means that we should take life as beautiful, as impermanent, worth protecting, worth appreciating.**

**And that’s what disasters do, right?**

**Nate Hegyi: And it also, like, I think disaster, kind of… It quickly shows you what's important in your life. It, like, strips and in these movies, it's the same thing. It's always like Tommy Lee Jones reconnects with his daughter via a volcano or Téa Leoni reconnects with her father via asteroid. You know.**

**Taylor Quimby: Asteroid therapy?**

**Nate Hegyi: Yeah, Asteroid therapy.**

**Taylor Quimby: Well, I guess I guess one last thing that I'll just say, and it’s going to sound stupid, but I mean it, which is that I really appreciate you, Nate, and I appreciate the show because we've been doing it for a long time. And, I can't believe we get to make really wacky stuff. And I think that we do a great job, sometimes, of finding the balance between depressing and fun. Um, and that is like, that's so much my relationship with the natural world. So, I don't know. Congratulations on 250.**

**Nate Hegyi: Congratulations to you. You've been around since the very beginning. 250 episodes is a lot, these days, we're not extinct yet. I'm not going to say that joke.**

**Taylor Quimby: Too soon, Nate. Too soon?**

**Nate Hegyi: Way too soon.**

**Hi this is Alex calling from Boston in response to your request for what episodes we share. I share the episode about the call of the void all of the time. That episode let me know I’m not creepy. And I know more people need to hear that. The other day at lunch all 7 of us had experienced it. So I sent everybody that episode. Love the pod, thanks so much!**

**Nate Hegyi: All right. So this is the part where everybody would normally file awkwardly out of the theater. So let me just end this by saying thank you for listening to all these years and for helping us celebrate 250 episodes.**

**Taylor Quimby: And also a thank you to Michael Benton, our, like, David Attenborough of Doom for this episode. If you want to learn more about the Great Dying and other great extinctions, he has a book out called, *Extinctions How Life Survives, Adapts and Evolves*.**

**Nate Hegyi: Also, we are kicking off a fundraiser for the next few weeks, and if you are a fan of the work we do, we really hope that you support it with donation. I mean, this is public radio, after all, and that means the vast majority of our budget — it comes from you! It comes from listener support.**

**Taylor Quimby: Absolutely. And in honor of this 250th episode, the first 250 people to donate this time around are going to get a lovely little Outside/In ginkgo leaf sticker.**

**Nate Hegyi: I just saw them. I just saw them on the Slacks and they look really beautiful.**

**Taylor Quimby: They're like really cool. And this is in commemoration of a fan favorite episode where we talked about the ginkgo tree, which, Nate, coincidentally, was one of those so-called living fossils that first evolved in the recovery period after the Great Dying.**

**Nate Hegyi: So go, ginkgo. That's amazing.**

**Taylor Quimby: Yeah.**

**Nate Hegyi: Also, if you become a monthly donor at $5 a month, we're going to send you an Outside/In hat. It looks really cool. It's blue.**

**Taylor Quimby: This episode was produced, recorded and mixed by me, Taylor Quimby. So you can send any emails my way if you think this was a horrible idea. Send them to.**

**Nate Hegyi: Me. It was edited by our executive producer Rebecca Lavoie, and by me, Nate Hegyi. So you can also send me emails if you, if you didn't like it.**

**Taylor Quimby: Music by Blue Dot Sessions.**

**Nate Hegyi: Outside/In is a production of New Hampshire Public Radio.**

*Oh my god.*

*Oh no.*