

Sawbones 450: The Great Stink of 1858

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Clint: *Sawbones* is a show about medical history and nothing the hosts say should be taken as medical advice or opinion. It's for fun. Can't you just have fun for an hour and not try to diagnose... your mystery boil? We think you've earned it. Just sit back, relax and enjoy a moment of distraction from... that weird growth. You're worth it.

[theme song plays]

Justin: Hello everybody and welcome to *Sawbones*, a marital tour of misguided medicine. I'm your co-host, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: Sometimes I do that voice unintentionally and it's like, almost like a parody of how radio people sound. Like, and I worry that you just might turn the episode on and think like, "Well, that's how this guy sounds." Like, "That's this guy, I guess. He's one of these radio guys."

Sydnee: That's true. But do you think if people hear and think you're one of those radio guys that that's bad?

Justin: I don't know!

Sydnee: Like are they... Are you worried they're going to turn it off?

Justin: Do they want the professionalism? You know?

Sydnee: I don't know.

Justin: Sometimes when we listen to a podcast, you and I, if it's like casual, it's good. And sometimes it's too slick and that's not good.

Sydnee: That's true, too slick— Well, I think... I think that is our bias because we are not slick. [laughs]

Justin: [laughs]

Sydnee: But no, we don't... I would say we don't necessarily use a traditional podcast voice either?

Justin: Mm-hmm.

Sydnee: So I don't know. You know what I mean.

Justin: And if you want to support non-traditional podcasts like ours—

Sydnee: [laughs]

Justin: ... there is no better way to do it. We're still in the game, even though we're elderly people in their twilight years, we're still podcasting.

Sydnee: Hey, we ain't slick.

Justin: We're not slick. We... This is the MaxFunDrive. This is our second MaxFunDrive episode. Our final MaxFunDrive episode of 2023. We are a network of podcasts, so the podcasts we make like *Sawbones* are supported by you, the people that listen to them. We own them. Max Fun has artists-owned podcasts. But they're supported by the people who like them. And this is the time that we come to you and say, "Hey, we really can't make these shows without you." Every year, your donations allow us to, well, I mean, live, and cloth our children and pay for equipment and stuff like that.

Sydnee: Cereal.

Justin: Cereal. All that good stuff that we require as human beings. It also helps us to spend more time on the shows to make them better.

And we have a... Of all the people that listen, rather, it's a really surprisingly low percentage of people who actually step up and say, "Hey, I like this in the world. I like the work that *Sawbones* does." And if you could be one of

those people, it'd really mean a lot. Maximumfun.org/join is the URL. If you can pledge just \$5 a month, we're going to have over 500 hours of bonus content for ya.

There's a new episode, Sydnee, our bonus episode this—

Sydnee: That's right. We took questions from our younger listeners and Charlie read them. Charlie chose which ones to read.

Justin: Yeah.

Sydnee: And read them, and interpreted them, and commented on them.

Justin: Yes.

Sydnee: And then had me answer them.

Justin: It's a lot of fun.

Sydnee: It's a lot of fun.

Justin: We have lots of old *Sawbones* BoCo in there for you to enjoy.

At \$10 a month You can get all that plus a reusable sticker for all the Max Fun shows. There's one of each. You can choose whatever design you want. They're really cool.

Ours say "Cure alls cure nothing." It's a cool design.

Sydnee: I already have mine on my laptop.

Justin: I'm looking at it now.

Sydnee: Mm-hmm.

Justin: There's more stuff, we'll talk to you about it again in the middle of the show. But, until then, uh, let's get on with it.

Now I'm excited to do this episode, Sydnee, because we originally had a chance to... How would you say? Dry run. Do a dry run of this episode at HerdCon.

Sydnee: Rehearse, I think, is the word you used.

Justin: Rehearse. Yes.

Sydnee: [laughs]

Justin: Rehearse this episode at HerdCon in front of an audience of our, you know, Marshall friends.

So we really appreciate them having us—

Sydnee: [laughs]

Justin: ... having it... What?

Sydnee: Our Marshall friends?

Justin: Marshall friends.

Sydnee: That sounds so funny.

Justin: Friends from Marshall University, yeah.

Sydnee: Marshall family, even.

Justin: Marshall family! It is a family! Thank you!

Sydnee: We both went to Marshall, we both graduated from Marshall.

Justin: So if you're ever around town when HerdCon's going on, it's a really fun little pop culture kind of con, where you can learn stuff and have fun and hang out with other cool folks.

Sydnee: And sometimes we're there.

Justin: And sometimes we're there, apparently.

Sydnee: Justin, I was inspired... I always like when there's something that is happening either... Well, I don't like when it's a current event in the media necessarily that we're commenting on.

Justin: Mm-hmm.

Sydnee: 'Cause then sometimes it's scary and bad. But if there's something that people talk about on a popular show or a movie or something that relates to medical history, it's fun, because then you get to talk about something that might be like in the zeitgeist.

Justin: Sometimes it's fun. Sometimes I can feel you like prickling up a bit, like, "Careful Now. This is my territory. I don't want somebody else to find- Do this, like, as well as I do or find some cool thing I didn't know about."

Sydnee: Are you saying that someone could do it as well as I do?

Justin: No, that's what makes it so ridiculous!

Sydnee: [laughs]

Justin: It's because no one could. What is she worried about?

Sydnee: I'm not naive. I know I'm not the only one who talks about medical history. I'm just... best at it. [laughs]

Justin: You're just best at it. Just best at it.

Sydnee: I'm kidding. No. We were watching Ted Lasso.

Justin: Yes.

Sydnee: Yes. Which many people— we are not alone in that. I'd say many people were also watching Ted Lasso.

Justin: Yeah.

Sydnee: And there... It was mentioned, an event in London's history, the Great Stink of 1858.

Justin: [laughs]

Sydnee: And this was... It's funny because it's one of those things where I had never heard that term.

Justin: Yes, The Great Stink. [giggles]

Sydnee: No.

Justin: Which you would remember if you had heard it.

Sydnee: But I know enough about that period of history and specifically what diseases they were concerned about, and all of that. Like I understood the context, but I had never heard that term.

Justin: Yes.

Sydnee: So that feels... that always... It's a little exciting 'cause it feels like, "Oh..."

Justin: Oooh.

Sydnee: There is a hole in that historical record for me, not in all, but for me personally, in Sydnee's understanding of that historical record, there's a little hole with a cool story or an interesting story, or maybe a sad story. Some sort of story that I don't know and I can share with you. And so this is a— It's a story about sanitation. It's a story about the miasma theory of disease. It's a story about cholera. But primarily, it's a story about a Great Stink. [laughs]

Justin: Yes.

Sydnee: So a lot of the times doctors get credit for saving people's lives.

Justin: And as well they should.

Sydnee: Maybe, I don't know. We do the... we do the best we can. But this is not the story of a heroic doctor.

Justin: Oh. Okay. More a... Is it a story of a heroic podcaster? Cause I could do with a few of those.

Sydnee: No, no. It is a story of a heroic engineer.

Justin: Oh! Okay.

Sydnee: So ,London is an old city. You may know that.

Justin: It is way older than Huntington. There's no other way of saying it.

Sydnee: There's no doubt.

Justin: There's no doubt.

Sydnee: It's just... I mean, we have to admit that. I know a lot of people were questioning—

Justin: Eddie Izzard.

Sydnee: ... was Huntington, West Virginia or London, England? Which one was here first?

Justin: [laughs] Eddie Izzard has that great joke, "I come from England, where we make the history." [laughs]

Sydnee: [laughs]

Justin: That's where history comes from.

Sydnee: So, London, of course, like any city, you start out small.

Justin: Yes.

Sydnee: And you get bigger.

Justin: Yes it's—

Sydnee: You start with like one person.

Justin: It starts off... Here's how cities work.

Sydnee: [laughs]

Justin: It starts off with one person in a house and they say, "I'm the mayor." And there's no one around. And then they go around the area and they look and see if there's any other people around. And then they say, "Hey, I got a new town. We already have a mayor. Don't— "

Sydnee: "It's me."

Justin: "It's me. But I would love- We need a treasurer or whatever, a secretary. Whatever."

Sydnee: [laughs]

Justin: "And then will you come move your house near mine?"

Sydnee: [still laughing] All towns start like a club.

Justin: It's like a club.

Sydnee: No, you know, we were taught in West Virginia history that the first person to start West Virginia was Morgan Morgan.

Justin: Yes.

Sydnee: That was not the first human to live in the land that we now call West Virginia.

Justin: No.

Sydnee: But we were definitely taught that in West Virginia history.

Justin: Yeah.

Sydnee: Problem.

Justin: Yeah, you heard about Morgantown? That's... I mean, I feel like that's kind of proof positive of my... of my theory, right? "My name is Morgan Morgan, this is Morgantown."

Sydnee: [laughs]

Justin: "And it's A real smorgasbord of Morgans."

Sydnee: [still laughing] Somebody got a golden horseshoe.

Justin: Yeah.

Sydnee: Anyway, so the population of London really started to explode. It was obviously, like any city, always on the grow. But between 1800 and 1850, the population doubles. That's 50 years, twice as many people crammed into one place.

Justin: Yep.

Sydnee: And when you have that many people, you have a lot of people... waste.

Justin: Yes.

Sydnee: You know.

Justin: Yes. You know what we mean. Dookie.

Sydnee: You know what we mean.

Justin: Dookie.

Sydnee: There was, of course, a sewage system in London prior to this point.

Justin: Well, yeah.

Sydnee: And people had already thought about that. Like, the poopy has to go somewhere. That—

Justin: The poopy gotta go somewhere.

Sydnee: Yeah, like, I imagine one of the first thoughts a person had when they pooped was, “Well, this has gotta go somewhere.”

Justin: [laughs]

Sydnee: But it was pretty old. There was a brick sewer system that had been constructed in the 17th century. And since then a ton of like sewers and cesspits and places to put waste had been constructed all over London. And as the city grew these would fill and often overflow and like you'd have methane gasses being released from all these, like cesspits and stuff. Things would catch on fire sometimes. So it was not necessarily like a great system that had been put in place. And a lot of it, all of it, in essence, emptied into the river Thames. Which, by the way, is spelled like it's “Thames” [rhymes with “names”] but don't you get it twisted, it's “Thames” [rhymes with “hems”]

Justin: Don't get it messed up.

Sydnee: No.

Justin: Where did we see- Where did...? Oh my gosh, what was? Oh, in *Cats*!

Sydnee: Yes.

Justin: When he tries to rant... rhyme...

Sydnee: You're talking about James Corden now.

Justin: James Cordon.

Justin: James Corden, yes.

Sydnee: Uh-huh, yeah.

Justin: Okay, yes. I'm done talking about James Corden. Sorry.

Sydnee: Okay. Now maybe this was working out for a while, that everybody dumped their poop into the river Thames.

Justin: I mean, it seems workable to me.

Sydnee: But changes in the 1800s greatly increased the amount of human waste that was flowing into what had previously been called by British writer John Aubrey, "The silver Thames."

Justin: [laughs]

Sydnee: It was no longer silver. John Aubrey also, a friend to the fourth Doctor.

Justin: Oh really?

Sydnee: Yeah, he notes that at one point.

Justin: Tom Baker?

Sydnee: The fourth Doctor. Yes.

Justin: Tom Baker.

Sydnee: Mm-hmm. Yeah.

Justin: Yeah? Wow.

Sydnee: He talks about being friends with him.

Justin: That's cool.

Sydnee: Yeah. Just a little *Doctor Who* reference for you.

Justin: Yeah, just for fun.

Sydnee: Yeah. The Silver Thames could not maintain its color because the old wooden pipes in London... At this point a lot of the sewage system had been wooden. Like I said, they were brick and wood, were being replaced by more efficient iron pipes.

Justin: Mm, good.

Sydnee: Which is good, but they were also more efficient and there were more of them which channeled more waste into the Thames.

Justin: A lot. Hey, listen, get it in there. [laughs]

Sydnee: [laughs] And also there was a new hot trend that was sweeping the city: flushing toilets.

Justin: Ohh boy, that really blasts it through.

Sydnee: Yeah. So now a lot more effluence [laughs]...

Justin: Hooh! Well la di da!

Sydnee: Was going... [laughs] So, the result of all this is that the Thames had started to look less Silver and more brown. [laughs] Sort of a pale brown.

Justin: From the...

Sydnee: Waste.

Justin: ... effluence.

Sydnee: And the condition was obvious both from a visible and... and... olfactory—

Justin: Olfactory.

Sydnee: Standpoint. [laughs]

Justin: Oh, see, I knew the fancy word you were going to use that time.

Sydnee: So in fact in 1855, This is as things are really starting to get to a tipping point. Like everybody is starting to get worried by now. Michael Faraday, like the scientist?

Justin: The Faraday cage guy.

Sydnee: Yes, the Faraday cage guy. Exactly.

Justin: Yep.

Sydnee: You know about him because of *Lost*, I'm assuming? [laughs]

Justin: Yeah, correct.

Sydnee: He went to the banks of the river and he decided to do an experiment to see How bad... How bad? Just how bad is the river Thames? And the experiment he did is he dropped pieces of white paper into the river—

Justin: Gross. [laughs]

Sydnee: ... to see like how long— How far can they drop before you can't see them.

Justin: I had a moment where I was like, "Well littering's not cool!" Then I was like, "Well, we're already putting a Lot of stuff in this river, huh?"

Sydnee: Yeah, I wouldn't worry about these pieces of White paper.

Justin: [laughs]

Sydnee: Because after they had dropped less than an inch, you couldn't see them anymore. And in case you were in doubt. Like, "Well, but are you sure, that it's human waste? Maybe it's something else? You know, murky waters, who knows why..."

Justin: Who knows.

Sydnee: Michael Faraday stated that, "Near the bridges the feculence rolled up in clouds so dense that they were visible at the surface, even in water of this kind. The smell was very bad and common for the whole of the water—"

Justin: [laughs]

Sydnee: [laughs] "It was the same as that which now comes up from the gully holes in the streets. The whole river was for the time, a real sewer." So it was... it was poop.

Justin: It was poop, folks.

Sydnee: Yep.

Justin: Sorry folks.

Sydnee: And in this time period, like the city was aware. Like Michael Faraday was not the first guy to walk over to the banks of the Thames and go, "I think it smells bad, y'all."

Justin: "Guys..."

Sydnee: "I think it... I think like, this is stinky." He was not the first one to notice this." Like people were already complaining about that.

Justin: Yeah.

Sydnee: And the city had taken the approach of like, you know if you think like, “Maybe I can get away with not bathing or showering for a while if I just put on like a whole bunch of Axe body spray”?

Justin: Mm-hmm.

Sydnee: They were sort of taking that approach.

Justin: Yeah.

Sydnee: I assume you use Axe— I wouldn't... I wouldn't use Axe body spray.

Justin: I'm not an Axe body spray person myself, no.

Sydnee: No, I know I'm joking. I know you don't use Axe body spray.

Justin: Talk about a great stink. Axe body spray.

Sydnee: Whoa!

Justin: Whoa.

Sydnee: Whoa!

Sydnee: Shots fired.

Justin: Shots fired, yeah.

Sydnee: [laughs] So they would pour like lime and carbolic acid into the water to try to just sort of... cover it. What was happening there.

Justin: Yeah, to get like Febreze.

Sydnee: Yeah. Or like—

Justin: Although Febreze, that's not exactly fair 'cause it like bonds to the molecules... Or something. It's not just covering the scent.

Sydnee: Mm. Right...

Justin: That's what the commercials tell me, at least.

Sydnee: That's what they... Yeah, the little image, that's what it looks like.

Justin: That's what it looks like in the commercials, yes.

Sydnee: Like the little stink particles—

Justin: Yes.

Sydnee: ... are binding, are bonding, with the Febreze particles and... But then where do they go, honey? Where do they fall?

Justin: Where do they go?

Sydnee: Where do they go? So anyway, they would do this to try to fix it, but obviously that's not like going to fix the problem.

Justin: Mm-hmm.

Sydnee: Like you can't... even if you are hiding the smell momentarily, the waste is still in the river.

Justin: Right.

Sydnee: And more And more of it is flowing into the river. And so this was bad for a couple of reasons. One is the obvious. It's gross.

Justin: It's gross, yeah.

Sydnee: Like you don't... You don't want to smell that. But the other is that in this point of history, many people, and this includes not just lay people, but scientists and doctors and people who would tell you, people who you

would trust to tell you, like, "How does disease work?" Would tell you that, like, a bad smell is dangerous to you in that it can give you illness.

Justin: Right.

Sydnee: Like you can get sick from smelling something bad.

Justin: The miasma theory.

Sydnee: Precisely.

Justin: Of disease.

Sydnee: So that at this point in history, a lot of people believe that, you know, if... That that is how disease is spread. So when you would see something... Like what we would know now to be an infectious disease, so an outbreak of something that would be spreading among the population.

Justin: Mm-hmm.

Sydnee: What you would assume is like all these people got sick because they all inhaled the same thing.

Justin: Right.

Sydnee: As opposed to they passed something or they were all, you know, eating and drinking from a contaminated source. Whatever. Right? So like it's interesting because you're bumping up against a truth.

Justin: Yes.

Sydnee: Which is if your water source has poop in it, that will make you sick.

Justin: Yeah.

Sydnee: But not because it smells bad.

Justin: Right.

Sydnee: Right? But like you're bumping up against something that's true.

Justin: You could also see, though, how you would make that mistake if you've ever been in a sort of puke trigger situation, which is common in elementary school.

Sydnee: Mm-hmm.

Justin: I feel like I saw this happen, where you would— Someone would throw up and then you'd smell the throw up and it would make you throw up. I would— If I was an old-timey person, I'd probably think like, "Case closed. [laughs] Case closed."

Sydnee: Yes. Well, and I mean—

Justin: [As Old-Timey Person] "You can't smell this stuff; it makes you sick." Which... yes... but...

Sydnee: And again, like people were getting all these illnesses— and they would blame all this stuff on the stench of the Thames, diphtheria and scrofula and cholera, and all these different things, they would blame on the river.

Justin: [singing] "The stench of the Thames."

Sydnee: [laughs] And it was, you know, like in the case of cholera, this is true in a sense, just not because of the smell. It's because, like, if you had a heavy rain then the water from the Thames could wash back into the city or into... and would in fact wash into water supplies. The sewers would contaminate places where you were getting your drinking water.

Justin: Mm-hmm.

Sydnee: And then you would drink the waste—

Justin: Drink the poopy water.

Sydnee: ... and you would get really sick.

Justin: Yes.

Sydnee: Which is exactly what was also happening in this 50-year period leading up to the Great Stink is London had a series of terrible cholera outbreaks.

Justin: Ah, okay.

Sydnee: Almost certainly related to this exact problem.

Justin: Yes.

Sydnee: And I want to tell you about that. But first we have to go.

Justin: Where?

Sydnee: Well, not to the billing department.

Justin: No, to me talking about the MaxFunDrive. If you like our show and you want to say, "Hey, I want to keep this going." You know, every year we have a bunch of people whose contributions lapse because of... It could be anything. Financial situation change, credit card detail, whatever. So a lot of this drive is honestly just trying to get back to where we were a year ago. So if you... So you should know that if you like what you are hearing now the only reason it exists is because other folks, or you maybe, if you've already been kind enough to donate, have stepped up and said, "Hey, I want this to keep happening." It is the only way that we have been able to make *Sawbones* as consistently as we have. To the work that Sydney does with *Sawbones* in terms of like science communication and getting the word out about things that aren't on the level and all the great stuff that she has been able to do with this show is only possible because of donations from listeners like you. If you can donate just \$5 a month, that level of contribution is so hugely important, it really adds up and it allows us to have a sustainable plan for what the year is going to look like. Plus you get free stuff.

Sydnee: That's right. That's why this is the best time to do it.

Justin: Yeah.

Sydnee: Because during the MaxFunDrive we have all kinds of fun gifts to give you—

Justin: Yes.

Sydnee: ... for joining or upgrading your membership.

Justin: We told you about Olivia Fields' beautiful, reusable stickers. That's if you can donate \$10 a month. At \$20 a month We have the MaxFun culinary kit, which has a MaxFun family cookbook designed by Tom Deja featuring recipes from your favorite MaxFun shows. And a jar of bespoke Maximum Flavor spice blend which I was on the Advisory Council helping to choose that blend—

Sydnee: Oh my goodness!

Justin: ... because of my refined palette.

For \$35 a month... Wow, that's so generous of you. Super-duper cool. You'll get all that stuff we already talked about plus, the Maximum Yum apron featuring artwork by Sabrina Volante. It is really nice. We have one in our home now. It's a beautiful apron. And those are just our ways of saying thank you for supporting us. There's also all the Max Fun bonus content. Like we said, Charlie did a medical questions episode. She also designed a *Adventure Zone* game for me, and Travis and Griffin and Dad to play through, which is true. You've got to listen to it, by the way it is... unhinged.

Sydnee: I had to listen to this one. It's hilarious.

Justin: It's really, really great.

Sydnee: I mean, she's so funny.

Justin: She's so funny. But the main thing is that you are supporting the shows. You choose the shows that you listen to, the ones that you like, and your donation goes to those shows. A small portion goes to MaxFun, which is hugely helpful because they are the ones that get you these gifts and help with your membership details and help produce all the shows and all that stuff. So, but the rest of it goes directly to the shows, shows that you like, shows that you love. The shows that you're saying, "Hey, I want the world to be more of stuff like this."

Sydnee: I want everyone to know about The Great Stink.

Justin: The Great Stink deserves to be... smelled or heard of. Enh, not smelled.

Sydnee: Remembered.

Justin: Remembered. Thank you. So, this is the time to do it. Please stop what you're doing right now. Unless you're driving or in surgery or whatever. You know, if you can. Go to maximumfun.org/join and just make it happen. We really appreciate you. Thank you so much for doing this. Thank you for indulging us with these pledge breaks here. And thank you for being there for us, for all these years. Thank you.

Sydnee: Thank you.

Justin: Thank you. Now, Syd, where were we?

Sydnee: So I was about to refresh your memory about cholera.

Justin: Okay.

Sydnee: Because we have talked about cholera on the show before. But I do not expect, although I was going to say there is no quiz, but we do in fact do a quiz sometimes.

Justin: There is a quiz.

Sydnee: Cholera, as a little refresher, for those who don't remember or if you're new. It's an old disease. It has been a scourge of humanity for many centuries. It is a bacteria, A bacterial illness. Vibrio cholerae. Gram-negative, if that's the kind of thing you want to know.

Justin: It is!

Sydnee: [laughs] But you get it through my favorite route of transmission.

Justin: Which is... the fecal-oral!

Sydnee: That's right, the fecal-oral route. So basically it can live in like saltwater or brackish water of some kind. You would—

Justin: What's brackish water?

Sydnee: Like not—

Justin: Good? [laughs] Like bad water. Like gross, sort of—

Sydnee: Well, it's not... It's not clean water. It's not fresh water.

Justin: Ah yeah, I got you. It's uh...

Sydnee: Water that is saltier than fresh water but not as salty as seawater.

Justin: Wow, okay, there it is.

Sydnee: It's not fresh water.

Justin: Not fresh water.

Sydnee: Anyway.

Justin: Not salt water.

Sydnee: So you can— you ingest it somehow. You get it in your body and then it makes you really sick with diarrhea. And the way that someone else

gets it is that either they are helping care for you, cleaning you, and they get it that way because they're touching you or like you don't... you wipe your butt and you don't wash your hands and then you touch somebody.

Justin: That's not true! Who told you that?

Sydnee: No, I mean like... Not you. The royal you. [laughs]

Justin: Okay.

Sydnee: And it causes a kind of diarrhea that we classically called rice water stool.

Justin: Ooh.

Sydnee: Because eventually it just looks like—

Justin: Oh. Oh! Oh! I don't like this.

Sydnee: It's like water with little flecks in it.

Justin: [whispers] I don't like it! I don't like it!

Sydnee: That could look like— They're not rice. It's actually like pieces of the lining of your intestines.

Justin: [whispers] I don't like that you're saying this.

Sydnee: Just like little flecks of it.

Justin: [whispers] I don't like the words you're saying.

Sydnee: Anyway. And you know back then, like we didn't wash... Hand washing was not widely accepted, although at this point in history we had started to think like, "Maybe we should wash our hands."

Justin: [snorts]

Sydnee: But for a long time we didn't wash our hands [laughs] and actually the guy who said, Semmelweis, who said like, "Hey, I think we should all wash our hands!" Like he lost his career and his sanity because of it. Because he was so persecuted for saying like, "Wash your hands." There was also another guy who proved how we... How that anybody could get cholera by drinking some diarrhea water. You remember that guy?

Justin: Anybody!

Sydnee: Max von Pettenkofer?

Justin: "Hey, listen, this could happen to anybody that drinks diarrhea water. There's no need for stigma."

Sydnee: But... So that's... that's cholera. The problem back then is that we didn't have antibiotics to treat it, and we didn't have an easy way to keep you hydrated because the thing is, if you could maintain hydration, you could beat cholera. But we didn't... You didn't have access to IV fluids, so you would get super sick. You weren't able to hold down stuff by mouth, fluids by mouth. Your body would become completely depleted of any fluids. You'd go into organ failure, you'd die. And a lot of people did die, unfortunately. London's first major cholera epidemic was in 1831. And over 6000 people died. There was a following one in 1848 where like 14,000 people died and another 10,000 in 1854. So major events were happening and this was all related to the poor sewer system and the dirty, dirty Thames.

Justin: The dirty, dirty Thames.

Sydnee: And again, through this period, most people still thought that all these people were getting cholera because they were smelling the river.

Justin: Mm-hmm.

Sydnee: Which would make it hard for you to prevent getting cholera if all you thought you needed to do was avoid the smell.

Justin: Yes.

Sydnee: Because you might still be drinking the water. There was a guy who was figuring it out, which we've again talked about extensively on the show before. There was a guy named John Snow. He was a British doctor. He noted during the second cholera outbreak That there was a pattern. like the people who got it seemed to be drinking from a similar water source.

Justin: Mm-hmm.

Sydnee: He noticed this pattern and talked about it during the second outbreak. Nobody listened to him.

Justin: [chuckles]

Sydnee: During the third outbreak he did the thing with the Broad Street pump. It seemed like everybody who was getting sick was getting their water from this one water pump. So he took the handle off the pump So nobody could get water from it. Which seems like a jerk thing to do, but it saved everybody's life.

Justin: Yep.

Sydnee: Because they couldn't access this contaminated water source so they didn't get sick.

Justin: I wish someone had caught him like, "Hey, hey, hey, hey! What are you doing? We need that."

Sydnee: People still didn't buy it though. You know that didn't... I mean there were definitely some people whose minds were changed, but this was not enough to shift everyone's... opinion.

Justin: Well, hopefully he didn't try to sell it. That would have been rude if he had broken it off and been like, "Here who wants to buy it?"

Sydnee: I really [laughs]...

Justin: "Now you have the power."

Sydnee: Ha ha.

Justin: "Now you're in control."

Sydnee: I really like— By the way, this is, I don't think we said this at the time. Part of his argument as he, like, published his paper on, "Listen, it's the water guys! Not the stink!" Part of his argument was, "I talked to these 70 guys who work at a local brewery who didn't get cholera. And they only drink beer. So the people who only drink beer are healthy, but you guys who drink water are sick."

Justin: "You do the math."

Sydnee: "You do the math." Now, I am assuming by "are healthy" he meant "don't have cholera." [laughs]

Justin: Yeah. Comparatively, you're healthy.

Sydnee: So whether they knew that the river... how it was making people sick. They knew it was making people sick. Government officials started to say, like, "We've got to do something about it." Because now it's June of 1858 and it is hot. London is hot this summer. Hot this summer. It's 1858. The temperature in the shade was in the mid to high 90s.

Justin: Oh my gosh.

Sydnee: Yes. In the sun it was well over a hundred degrees.

Justin: Mm-hmm.

Sydnee: It was hot. The water level in the Thames was lower, so some of the waste was just sort of sitting on the banks.

Justin: Ugh!

Sydnee: Visible. And the smell was so bad that Parliament had to soak the curtains on the windows in lime to try to mask the smell. And it was still so

intense that they actually considered, like, "Maybe we just need to move Parliament to another city."

Justin: Yeah.

Sydnee: Like, "We can't be in London anymore. We can't— " They could not carry on with the business of government because of this overwhelming... smell.

Justin: And then Morgan— is over there like, "Oh, look who comes crawling back! I see you guys need a city."

Sydnee: [laughs]

Justin: "Bad news. I'm already the mayor."

Sydnee: Um—

Justin: "But You can move your city around mine if you want."

Sydnee: It's said that Queen Victoria and Prince Albert actually were like... They attempted like one of their Little River outings to, like, sail down the Thames and enjoy it. And they like, immediately returned and were like, "Never mind! Never mind! Forget this!"

Justin: [laughs]

Sydnee: "It's very smelly." Every news headline... You can look at so many people commenting, like reporters and journalists and writers and poets and artists, talking about how bad London smelled in the summer of 1858. There are news headlines that talk about the stink and the fear of disease. Charles Dickens wrote about it at the time. He said the Thames was a deadly sewer and he said, "I can certify that the offensive smells, even in that short whiff, have been of a most head and stomach distending nature." There was... Sidney Smith was a humorist who said, "He who drinks a tumbler of London water has literally in his stomach more animated beans than there are men, women and children on the face of the globe."

Justin: [laughs]

Sydnee: There were cartoons in the paper. They used to refer to the river as Father Thames and they— So there are all these like, you know, depictions of the river as this old guy. And it's like a picture of him with his three children: Diphtheria, Cholera and Scrofula. [laughs]

Justin: [laughs] And Need and Want and...

Sydnee: Exactly.

Justin: Yeah.

Sydnee: There were pictures of what they called Monster Soup, which is the Thames. And they would have close-ups like, "This is what the water looks like close up" and it would be like just a bunch of little mythical beasts and creatures and monsters that were in the river there. There was a poem I found, The Dirty Father Thames, "Filthy, filthy river, Foul from London to the nor, What art thou but one vast gutter?, One tremendous common shore." Everyone had some fanciful way... This is so British. They all had some beautiful artistic way of depicting how bad it stunk. Except the city press who just wrote, "Gentility of speech is at an end. It stinks. And whoso once inhales the stink can never forget it and can count himself lucky if he lives to remember it." [laughs]

Justin: [laughs]

Sydnee: So, the House of Commons is like, "We gotta do something."

Justin: Something.

Sydnee: "Listen, y'all, we got to do something." In the opening of the debate, the leader of the House of Commons, Disraeli said, "The Thames is a Stygian pool, reeking with ineffable and intolerable horrors."

Justin: Ineffable...

Sydnee: Ineffable.

Justin: [sings] Ineffable.

Sydnee: [laughs] And so basically what they said is, "We need to... We need to pay engineers to fix it. The city needs to put money into fixing the sewer system." So they do. They hire an engineer. The guy is Joseph Bazalgette.

Justin: Mm-hmm.

Sydnee: And he is the hero of our story.

Justin: Distinguished.

Sydnee: And he had already been working for the government. There's this note where, like, he was like the second engineer in command guy. He was not the boss. He was like second to the boss. And the guy who was his boss reportedly died from the stress of the job.

Justin: Yeah. I mean, that's a lot of pressure.

Sydnee: Which is just a wild thing to just sort of note. Like, "We gave the job of head of sewers to this one guy. And it was such a terrible, stressful job..."

Justin: I mean, hon, I don't want to quibble with you and with history and everything. But we also knew about four different ways people could die. It's like, get hit by trolley, uh, stress of job—

Sydnee: Bad smell.

Justin: Bad smell, old age. So it had to be one of those four. Or stabbed by Jack the Ripper. So it had to be one of those five ways you could die. So maybe he also had like, [laughing] something else going on perhaps?

Sydnee: We also thought scrofula could be cured by the King touching you at the time.

Justin: No. One of the few things that can't be cured by the King touching you.

Sydnee: [laughs] So this project that they undertook to rework the London sewer system, which would take many years and many millions of dollars, created these new drainage systems—

Justin: Pounds?

Sydnee: Oh. Many pounds.

Justin: Thank you!

Sydnee: Sorry. Excuse me. Many millions of pounds. Would create these new drainage systems that would run parallel to the Thames. This... They built these pumping stations to move waste and embankments. There's this whole system, like you can read... If this is your thing, you can read these—

Justin: And you know if it is. And you know it is.

Sydnee: [laughs] ... descriptions of how they were going to move waste. Like at some points carrying it up out of lower lying areas and allowing gravity to carry it out of the city. Other pathways for flow of waste. They built embankments. If you've ever wondered why you stop, if you're on the London Underground and you stop at something called Embankment, that's what they're talking about. They built these... Victoria Embankment. Do you remember this?

Justin: Yeah.

Sydnee: They build these embankments, these big hill kind of things, to like, house parts of this system. These are when these were built. These embankments and these beautiful pumping stations. There's one at Crossness and at Abbey Mills that are actually like, preserved English heritage buildings. Because if you look- And there are pictures, you can look. They're gorgeous, inside. So they weren't just like, functional. There were these, like, works of art inside these pumping stations to move human waste. And they like... I think it's interesting, like it was such a celebrated

thing. They named the embankments like Victoria and Albert. They named the engines in the Crossness pumping station after royalty. Which is like an honor and. It's all part of a sewer system.

Justin: Yep. But a really... A really helpful one, hopefully.

Sydnee: The... I thought the... I like this. The ironwork inside is described as "important."

Justin: Yeah. I mean, yeah.

Sydnee: So the project would end up costing more than double what they thought, and it would take a long time. It wasn't complete until 1875. But was it worth it? Well, during construction in 1866, there is another cholera outbreak which is going to take over 5000 lives. However, the area of London that was struck by this cholera outbreak was part of the city that had not yet been connected to the new system.

Justin: Mmm.

Sydnee: It was very clear that the people who were being impacted by cholera were people who were not yet benefiting from this new sewer system. Which really drove home for a lot of people, "We are getting sick because of this water. It is not the smell. We didn't get sick when it was really stinky in 18— We didn't get sick when it was really stinky in 1858. We're getting sick now because of this water." And there was actually another report published in *The Lancet* by Doctor William Farr, who actually initially had never believed John Snow and now was like—

Justin: "You know nothing! You know nothing of cholera, John Snow!"
[laughs]

Sydnee: [laughs] Okay. Is this a reference to *Game of Thrones* that I'm not understanding?

Justin: I guess you understood it a little bit because you did say it was from *Game of Thrones*, huh Syd? Maybe not as high and mighty as you may seem.

Sydnee: Because of this, seeing this difference between people who were on the new sewer system and people who weren't, and William Farr's paper, everybody went, "I guess it was drinking the water after all!"

Justin: Whomp, whomp, whomp.

Sydnee: "We shouldn't drink poop!" It took us a while to figure that out.

Justin: That's the moral.

Sydnee: This is humanity. It takes us a while to figure out we need to wash our hands. It takes us a while to figure out that we shouldn't drink poop. We still haven't figured out that we should stay home when we're sick. We still can't get that one right, can we, folks?

Justin: No.

Sydnee: Um...

Justin: Well, no, I mean, capitalism.

Sydnee: Well...

Justin: If I may.

Sydnee: I know.

Justin: Sorry, I don't mean to ruffle any feathers.

Sydnee: I mean, obviously everything's more complex and nuanced than that. But you know... You know what I'm saying. We're humans. We are so fallible. It was lauded. It was supported. The project was... I mean, it was really... It was one of... It was one of those times when, like the government is doing this big, giant, expensive, time-consuming thing and everyone is in support of it. Everybody is celebrating it. They like, toyed with the idea of like, "Let's just give Bazalgette like, 4000 pounds. Just give him a bunch of money, give him 6000 pounds! Just hand him money!" Like they actually

didn't do that. But they wanted to give him these, like, giant, like three year's salary bonuses, because everybody was so excited about this and so proud of it as just this amazing achievement of—

Justin: We can... we can...

Sydnee: You know, not just humanity, but of like London and the British Empire.

Justin: We can do great things when we work together.

Sydnee: So anyway, thousands, millions, who knows how many lives were saved by Joseph Bazalgette and this sewer system that he built. And he went on, he was knighted, and then he went on to like build bridges or fixed bridges around London. Just went on with his career doing his engineer stuff after he created this incredible thing.

Justin: And then?

Sydnee: Well, unfortunately the sewer system that he constructed was made to accommodate probably like four and a half million people, was what he estimated it could do. Which was way more than they had at the time.

Justin: Mm-hmm.

Sydnee: But now London is a city of more than eight million. So...

Justin: Yeah.

Sydnee: There's a lot more people. And the Thames is once again overwhelmed as my— I do not live there, but from my reading, the sewer system is once again overwhelmed. They need to reconstruct. So they are building the Super Sewer, which will accommodate...

Justin: It's going to replace the Super Crackers that was there and now they've got the Super Sewer.

Sydnee: Yeah, I was reading about it. Like you can find the website where they talk about London's Super Sewer and all the things they're doing and they're very excited. I mean, it looks great, I— And I—

Justin: Looks great, Sydnee says.

Sydnee: We have talked about, like London has had issues with fatbergs clogging up their sewers and things.

Justin: Yep.

Sydnee: So they needed a new sewer. But you know what? That's what growth demands.

Justin: Growth—

Sydnee: Growth demands new sewers. If there's one thing you take away from this podcast...

Justin: Let it be this.

Sydnee: Let it be this. Growth demands new sewers. And the sanitary disposal of our human waste is, I mean, really one of the most important things we can do for our health. [laughs]

Justin: If you take away two things from this podcast, however, let it be this. This is our very last chance for you to get in on the MaxFunDrive to get these great gifts and more importantly to support the shows that you love. If you can, right now, take a second, please. Please, please, please. It really does allow us to do all the stuff that we do. Maximumfun.org/join. A pledge of \$5 a month, if you can swing it. Even that is a really big help to us because it all adds up and allows us to do everything that we do.

Sydnee: And you get all that bonus content, including the extra podcast we did.

Justin: Yes, Sydnee and I did a *Fast and Furious* review podcast and you can be a party to that, if you—

Sydnee: That's a... That's a whole... It's like a secret podcast.

Justin: Yeah.

Sydnee: Well, not secret, we told you. But like, you get it.

Justin: We are going to do another... We're doing, on Wednesday at 9:00 PM over on YouTube, on the McElroy Family channel, Sydnee and I are going to be watching, for reasons that you won't understand until you've experienced it, we're going to be watching *I Believe in Santa* on Netflix. Just 'cause it's... outrageous.

Sydnee: I... I don't even know how to tell you about this movie.

Justin: You all are gonna freaking flip. We're gonna watch it together. You're gonna watch it with us. It's gonna be a lot of fun and be chill. And that'll become a MaxFunDrive event, too. But don't wait. You know, go right now to maximumfund.org/join and help us do the stuff we do. Thanks to the Taxpayers for the use of their song "Medicines" as the intro and outro of our program. And thanks to you for listening, we appreciate you very much. That's going to do it for us. Until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

Justin: And as always, don't drill a hole in your head.

[theme music plays]

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