Sawbones 235: Antimony

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Intro (Clint McElroy): *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 music plays]

Justin: Hello everybody, and welcome to *Sawbones*: a marital tour of misguided medicine. I am your cohost, Justin McElroy!

Sydnee: And I'm Sydnee McElroy.

Justin: Hey, Syd.

Sydnee: Hey, Justin.

Justin: Happy Saturday to you.

Sydnee: Thank you! Same—uh, same to you. As well. Also. To you.

Justin: Um—

Sydnee: In addition. Hey, uh, Justin?

Justin: Yeah?

Sydnee: Before we get started on this week's medical misadventure…

Justin: Mm-hmm?

Sydnee: Uh, I thought—our last episode got quite a response.

Justin: Yes.

Sydnee: Not—both positive and negative.

Justin: I find it funny with *Sawbones* that everybody is very excited to see everything get dunked on until they are the ones… receiving the dunking, and then we are off base. [holding back laughter] It never fails that—there's always—it gets a lil close to home! Hey, listen, folks. I've been there. I know. Everybody's got a gris-gris.

Sydnee: I know. Well, we—we have—we have, um… uh, I have… challenged some of your strongly held beliefs about certain—

Justin: Yes.

Sydnee: —quote unquote "treatments."

Justin: Mm-hmm.

Sydnee: And I—and I just wanted to clarify a few points. I'm not—

Justin: About the ketogenic diet.

Sydnee: About the ketogenic diet episode we did last week. I'm not—I'm not taking anything back, so if that's what you're waiting for, I'm sorry. I'm not. Uh, but I—

Justin: A lot of people—I saw a couple—couple fellas accuse you of ignorance? And I—I'm glad they didn't say that to my face, for starters.

Sydnee: [laughs quietly]

Justin: 'Cause I'll get all gross alpha male on 'em if that is what the situation requires. And by that I mean I would yell at them back to them, very sternly.

Sydnee: I'm gonna give everybody the benefit of the doubt and say that if you—if you were critical of that, it is because you have been using the ketogenic diet and you have had success. And I—I think—at least I tried to make this point on the episode, and if I didn't, let me clarify it now.

If you are using the ketogenic diet and you are pleased with the results in terms of you've lost weight, and you wanted to, and you're happy about that, you feel good, uh, you've checked in with your doctor, your healthcare provider and they

say everything's doin' okay—you know, you're—you look good, everything is good inside and out and you're happy with that, and you feel full and fulfilled and satisfied with your life on the ketogenic diet, by all means, continue.

I in no way was trying to insinuate that everybody should avoid this. All I was simply trying to point out is that a lot of studies have shown that yes, you can lose weight on the ketogenic diet, but you could also lose weight on other low-carb diets, and you can also lose weight on low-calorie diets, and you can also lose weight on low-fat diets… and there's a lot of ways that you can lose weight.

If that is your goal, if that is the thing you're trying to achieve, you don't have to do the ketogenic diet to do that. And, in fact, for some people it may be a bad option; whether because it could make you sick, because of other medical conditions, or just because it makes you unhappy. 'Cause if it were me, it would make me very unhappy! And so I wouldn't wanna do it, 'cause I couldn't live that way.

So, if you are having success, by all means, continue. *But*, if somebody is telling you that the ketogenic diet is the magic cure-all for all your ills, I will—I will tell you, just like everything else we address on this show, there is no one-size-fits-all solution to weight loss, or any other medical condition, frankly. You have to find—I don't wanna say "any other medical condition." Any—anything this complex that involves lifestyle change. There's no one program that's gonna work for everybody.

So, science isn't about belief. It's not about the thing that you get really excited about, necessarily. It's just about fact. And—and that's important to remember.

So, if you—if you wanna continue the KD, there, and it's doin' good for you, by all means, but that doesn't necessarily mean that all of your friends and family have to do it too.

Justin: And also, uh, I mentioned a couple times that it sounds really hard and I bet it's really hard, and a lot of people were like, "Oh, it's so easy! Blah, blah, blah—" listen. I've done… a couple of different very carb-restrictive diets. It ain't easy.

And in my opinion—and this is from a layman whose only experience is just his own throughout his life—extremely restrictive diets are not sustainable for long periods of time for most people. For me, I will say. I can't speak for most people.

They are very hard to maintain, especially if you have a life that is not you sitting at home and, like, planning out all your meals 100% of the time. It can be very challenging.

Sydnee: Yes. It—some people might find it satisfying and easy for them, and kudos to you if you do. I think a lot of people find 'em difficult. And I think that there's a whole other issue that is longer than a quick note at the beginning of a podcast about—you have to be able to afford certain diets, and you have to be able to have access to things, and time to prepare foods.

And, let's face it, carbs are cheap, and carbs are fast. And for busy people on a budget, some of these other diets can be very hard just to access food, and we want people eating.

We don't want people going on diets that they lose weight on because they just can't eat or afford any other foods on the diet, so… I think there are a lot more issues there than whether or not you like the taste of fat foods, fatty foods.

Justin: So anyway—

Sydnee: You know, fat—foods with fat in them.

Justin: But we're not here to talk about the ketogenic diet, Syd.

Sydnee: No.

Justin: We're here to talk about… I'm just gonna say antimony, because you told me the show's about antimony, and I have literally no idea what that is.

Sydnee: It's an el—

Justin: I have no—usually I can come up with, like, a cute intro. I have no idea what that means.

Sydnee: Usually when I get emails about topics that we should cover, I'll read the email and I'll think "Oh, yeah. That—I've thought about that, and that is a good idea." Or, "I'm familiar with that. That would be interesting."

So, I wanna thank Claire and Katie and Keandra. They have all emailed us, uh, this topic suggestion, and when I first saw antimony I was like, "Well, okay. That's an element. I don't—why would I talk about that?"

I had no idea, and then I started reading, and I got really excited, 'cause it was a good one.

Justin: Okay.

Sydnee: Antimony is an element, like on the periodic table, you know? Of elements? Those. The ones that are on those shoes that I have.

Justin: Got it.

Sydnee: It is a lustrous gray metalloid.

Justin: Okay.

Sydnee: So now you have that information. The symbol for it is Sb. Because like most of the elements on the periodic table, the symbol is derived from, like, the Latin or the Greek or the—yeah. And its number is 51, if you care about atomic numbers.

Justin: Alright!

Sydnee: Now you've got that information.

Justin: This is gripping so far, Syd.

Sydnee: It's—[laughs quietly] it's—

Justin: I can see why you're so excited.

Sydnee: I'm getting there. It's naturally occurring in the Earth, mainly as a sulfide mineral Stibnite, which is where you get the Sb. A lot of it's derivatives are Sb. Um, it's mined largely in China, and today if you're talking about antimony, it's probably for some sort of industrial use.

Justin: Okay.

Sydnee: But, like most other random, pretty substances that people dug out of the Earth throughout history, we have tried to use it as medicine.

Justin: Mm-hmm.

Sydnee: I don't know what that is. We find something. It's, like, "Oh! That's kind of a pretty rock!"

Justin: 'Cause we didn't have any idea. "Let's try it! Let's rub it in ourselves! Let's swallow it! Let's put it in our butt!"

Sydnee: Somethin'!

Justin: Somethin'!

Sydnee: It's gotta do *somethin'.*

Justin: It's gotta be somethin'!

Sydnee: Also—

Justin: [crosstalk] rock! Serve me!

Sydnee: —also a poison, and we'll get into that.

Justin: Ah.

Sydnee: So some of the earliest uses of antimony are actually cosmetic. I think we may have talked about kohl, as in K-O-H-L, kohl, on the show before. So, um, Egyptians would use antimony as an eyeliner of sorts, or maybe even a mascara to highlight their eyes with dark—you know, dark eyeliner, kind of blackish substance, or blueish looking.

Um, but kohl is a traditional cosmetic that can be made of different substances, and it wasn't—it was used in Egypt, but it was also used throughout the Middle East and parts of Northern Africa, and then you can find other variations of it used throughout Southeast Asia, all over, throughout time and spanning cultures. It's still used today.

Antimony is what they made it out of there, and it was not only thought to be beautiful, but also for, like, eye health. It was thought to protect your eye from a variety of diseases, if you had them lined in this.

And the—there's also some, um, beliefs in other cultures that you can apply it to different parts of the face to, like, ward off the evil eye and that kind of thing. Um, it's, like—it's not necessarily just for women. Adults, children, any gender can use it.

Justin: Anybody!

Sydnee: Yeah! Just as a side note. And now, commonly—preparations you'll find today are—well, actually there are a lot of cosmetic brands sold that are—that don't have any toxic substances in them. But for a while, lead was a very popular compound in this, and charcoal, and things like that, which obviously led to their own health effects. But the Egyptians used antimony.

Justin: The only thing I care about it is, how's it look? For me, I will sacrifice—I'll eat lead if it'd make my eyes pop. Gimme that front page shine that I need to succeed in Hollyweird.

Sydnee: No you won't.

Justin: I would—I mean, if I had the option of, like, lead-based paint or sunken eyes that made me look all—like, I *have* to keep that, like, late 20's kind of glow. I think at—at *most* late 20's.

Sydnee: I think it looks very nice! Um, I don't think I could pull it off.

Justin: Lead?

Sydnee: No, I'm… like, the dark eyeliner, kohl. Like, the—

Justin: Oh, okay.

Sydnee: [laughs] Not lead. I would advise you, please don't put lead on your face.

Justin: Okay, fine! Unless it works for me.

Sydnee: In the form of cosmetics or any… thing else. Antimony was described by our buddy: the one, the only… Pliny the Elder.

Justin: Yeah.

Sydnee: In *Natural History*. He calls it, like, stibi, and stimi—

Justin: Stibi? That's a cute one!

Sydnee: [laughs] Alabasterum, larbaris— he's got lots of names for it. Um, we're talkin' about antimony. But in his book *Natural History*, he even has a chapter called, uh, "Seven Remedies Derived from Stimi."

Justin: Stimi.

Sydnee: Stimi. Uh, he thought there was a male and a female form.

Justin: Oh! Like so many elements.

Sydnee: Right. [laughs]

Justin: [laughs quietly]

Sydnee: That have genders.

Justin: [holding back laughter] That have genders.

Sydnee: Uh-huh? Um, the female form he thought was the smoother form. This is, likely, like, a naturally occurring form of the element. And then if it was the sulfide, like, alloy—the sulfide compound, I should say—that that would be rougher; and he called that the male form.

Justin: [wheeze-laughs] Sure!

Sydnee: And you would use different forms, of course.

Justin: Sure, bud.

Sydnee: Um, like everything that Pliny found, he had uses for it, 'cause if it existed in the Earth, there's a reason to put it in your body. So, um, he—he notes

the eye healing properties. He agrees with that. He also refers to it as, uh, platyopthalmos.

Justin: Okay.

Sydnee: Because it—for "wide eyes," 'cause it could dilate the eyes. So he notes that, like, women like to use it to make their eyes look wide. But, same thing that—

Justin: Wanted to get in the beauty tips.

Sydnee: —belladonna was used for this, too. To put in your eyes and dilate your pupils so that your eyes would like big.

Justin: [laughs quietly]

Sydnee: [laughs quietly] Um… it also—he—Pliny also noted that it was good for things like ulcerations of the eye, so we're getting a little bit more complex with eye illnesses. And then—and when you're going to do, um, that, you need to use it in its powdered form with some frankincense and some gum. Mix it all together and then put it on your eye.

Justin: Oh, okay.

Sydnee: Uh, you could also—[laughs] use it as a powder to "arrest discharges of blood from the brain."

Justin: Ugh, what?!

[pauses]

Sydnee: [uncertainly] I… nosebleeds?

Justin: Nosebleeds?

Sydnee: Maybe?

Justin: Did you think that was just pumping out of your brain, Pliny?!

Sydnee: Earbleeds? I'm not sure. "Arrest discharges of blood from the brain," which—I mean, you got bigger problems than what—

Justin: Does he mean, like, a subdermal hematoma?

Sydnee: Well, but, like—

Justin: They wouldn't even know they existed!

Sydnee: —where are you sprinkling it, then?

Justin: That's a good point.

Sydnee: 'Cause you're not gonna see that.

Justin: Yeah, that's a good point.

Sydnee: Yeah. I am impressed with your use of "subdermal hematoma," though.

Justin: [deep voice] Well, thank you, Sydnee.

Sydnee: Uh—

Justin: [deep voice] I cohost a medical history podcast.

Sydnee: He also thought it was good for dog bites. Um, especially ones that are… old? [laughs quietly]

Justin: Old dog bites that you keep lookin' at and you're like, "I gotta get—I gotta do somethin' about that."

Sydnee: "[holding back laughter] I gotta do somethin' about those dog bites."

Justin: "Ohh, it's lookin' bad. Ohh, I gotta get in there."

Sydnee: And you could mix it with grease, or maybe some wax, and put it on a burn. He thought it was good for that.

Justin: I mean… yeah, that would probably work great.

Sydnee: Well, are you just, like, sealing over it with the grease and the wax, and the antimony's just there for fun?

Justin: [shudders] Oh, not great.

Sydnee: Although, as we're gonna talk about, it can be poisonous, so…

Justin: So not great.

Sydnee: So not great. Um, Pliny also left very, uh—like, precise instructions—which he often did—on how to prepare it. Like, 'cause antimony—you needed to actually get—like, if you found it in an alloy, you needed actually remove—like, get the antimony out of it, and remove the other substances.

So, you'll find lots of these different preparation instructions for—for different elements, not just antimony. But for this one, I really enjoy it.

So, what you do… you, uh, enclose it in a coat of cow… dung.

Justin: Okay.

Sydnee: Your… rock that has antimony in it. And you're gonna burn it in a furnace now that it's in this cow dung. [holding back laughter] And then you're gonna douse it with some breast milk?

Justin: [incredulously] Okay?

Sydnee: To cool it off.

Justin: Sure.

Sydnee: And—which—you're not usin' *my* breast milk for that.

Justin: [voice breaks] No!

Sydnee: Sorry, Pliny.

Justin: Yeah, Pliny. Hey, Pliny? Refrigeration hasn't been invented yet, so—well, no. In that case, maybe they just had some extra to burn. Like, what are you gonna do with it?

Sydnee: W… well…

Justin: Can't keep it—can't keep it fresh.

Sydnee: But people weren't *pumping*. What do you mean, they had extra?! Nobody was pumping!

Justin: I guess. [holding back laughter] But if the baby's napping and your friend Pliny next door… needs your help, and you [crosstalk]—

Sydnee: You're just gonna stand over a fire…

Justin: —just squirt your—

Sydnee: … and hand express [through laughter] breast milk—

Justin: —milk into it.

Sydnee: —onto to cow dung wrapped antimony.

Justin: For medi—for medicine, yeah!

Sydnee: Then you're gonna pound it in a mortar with some rainwater.

Justin: Mm.

Sydnee: Um… I—at this point, the breast milk is just useless. Just gonna say.

Justin: Yeah. Diluted it.

Sydnee: Um, so then you're gonna have a thick and turbid part, and you pour that off into a copper vessel. Um, and then you're going to—uh, let's see. Oh, then there's gonna be some stuff that falls to the bottom, which has lead in it, and you don't want that, so you get rid of that.

Justin: Okay.

Sydnee: And you're gonna keep, like, siphoning off the top part of it into your copper vessel. Then you're gonna cover it with a linen cloth, and you're gonna

leave it. And then, again, you need to remove the top part, because now the part at the bottom is what you want.

Justin: Okay.

Sydnee: And somehow—

Justin: This is hard to keep track off.

Sydnee: Yeah. Somehow—and then you're gonna pound that with a mortar, and you're gonna put it in tablets, and you're gonna… take it for what ails you. Or sell it to people?

Justin: Probably sell it. After all that work, I'm not just gonna swallow it.

Sydnee: Yeah. You could make some money off of it.

Justin: Who's gonna feel like doin' that if you need—if you're afflicted with, um… [holding back laughter] whatever this was supposed to cure.

Sydnee: [laughs] Wha—just whatever. I mean, like—like Pliny said, you know. It's good for… um, it's good for eye stuff. It's good for burns. Good for dog bites. You know, it's interesting. Like, all those different things, you'd think you could just apply it topically. But now you've made these tablets, so I guess you may as well ingest it.

Justin: Yeah!

Sydnee: Yeah.

Justin: But it's poison, right?

Sydnee: Yes.

Justin: Yep. At this point, would it be poison?

Sydnee: Um, it depends on… I'll go ahead and say that. So, it depends on how, like, it is… it depends on the compound. You know, a lot of ele—elements can combine with different other elements—

Justin: Yeah, yeah, yeah.

Sydnee: —to make compounds. And if it's—if it's combined the right way, it can be poisonous to you.

Justin: Okay.

Sydnee: Um—

Justin: I feel like—

Sydnee: —probably not, like, on first contact. Like, if you're taking a small amount, not enough to, like, kill you. It's not like arsenic. It's not like you're gonna take it and die.

But it—but that's a good comparison. It could have, like, similar but less toxic effects.

Justin: I heard you describe that entire process, and I feel like if any process is gonna turn anything into poison, it was what you just described.

Sydnee: [laughs]

Justin: That sounded like the—the most likely to become poison process possible.

Sydnee: So, the—the way that this became really pop—because I'm mentioning as if, like, "So, this was this really popular medical treatment."

Not really. I mean, Pliny talked about everything.

Justin: Sure.

Sydnee: Like, if you look—like, this chapter that I just—that all this is from in *Natural History*, the next few chapters are about, like, mercury and cinnabar and, like, all these other elements that he has remedies from that are similarly strange and… labor intensive. And so—I mean, it wasn't necessarily standing out as the chief treatment yet.

Justin: Mm-hmm.

Sydnee: That really didn't happen until Paracelsus. Now, we have talked about Paracelsus—

Justin: Love Paracelsus.

Sydnee: —before. Do you remember his full name?

Justin: Uhh… I don't—let me try to remember. Hold on. [hesitantly] Philuppus Aureolus Theophrastrus Bombastus von… Hohenheim?

Sydnee: [simultaneously] Hohenheim. Mm-hmm.

Justin: Hohenheim, that's right. At the last couple syllables.

Sydnee: Yeah. You cheated, but… he called himself Paracelsus, which either meant "next to Celsus," because he followed Celsus—

Justin: He's either as good as Celsus, who was, like, a… famous Greek dude, right?

Sydnee: [laughs] There you go.

Justin: Like, a famous Greek philosopher. Paracelsus either means "as good as Celsus" or "better than Celsus," depending on the interpretation.

Sydnee: And if you—if you—like, if you listened to our episode about Paracelsus, it probably meant "better than."

Justin: Probably meant "better than."

Sydnee: Probably—that's what *he* meant, anyway.

Justin: Dude was—dude was, uh, out there.

Sydnee: He was a little full of himself. He lived in the early 1500's—and just to refresh—so, he kind of turned all of medicine on its ear by saying, "Hey, Galen was wrong. He didn't know what he was talking about."

He—he challenged the whole humoral system of medicine, saying that you are not sick because your humors are out of balance. You're sick because something from the outside, some sort of invader has made you sick. And to make you better, we can't just bleed you or give you something to make you throw up or, you know, go to the bathroom or something like that. To make you better, we have to put something in your body to heal you.

And so he was, like, the first one to talk about chemical medicine. And this was a revolutionary idea, you know. And—and some of the chemicals that he wanted to put in your body made a lot of people raise an eyebrow, because he was recommending treatments with things like antimony, but also lead and mercury and arsenic and… things like that.

This was actually, like, a big war in medicine at this point, between the Galenists and the Paracelsians.

Justin: Mm-hmm.

Sydnee: Who—who… you know, the Galenists were like, "Hey, that's poison. Don't eat that."

And he was like, "Yeah, but your bloodletting—"

Justin: The the other ones were like, "Not so fast."

Sydnee: He was like, "Well, but your bloodletting isn't working so great either, is it? Guys?"

And, I mean, the truth is, none of it was working. Right?

Justin: No.

Sydnee: Like, none of it was.

Justin: Let's do both.

Sydnee: But the—the idea—

Justin: Let's call a draw—

Sydnee: —the idea of medicine was a good idea.

Justin: Mm-hmm.

Sydnee: Uh, he also—by the way, I found a quote from him I don't think we dropped in to our previous episode that I really enjoy.

Justin: Okay. Is it related to the topic, or did you just wanna share it?

Sydnee: It is related to the topic. So, he was challenging the system of medicine. He was the first one to come up with this idea of "Take these chemicals. They'll make you better."

And, uh, he wrote, "I am different. Let this not upset you."

Justin: [laughs] I love that.

Sydnee: I love that! I love that. And so he was the one who really started saying, "Hey, antimony's good. I know it could be a poison, but it also could make you better. Let's, uh—let's give it a shot! The dose makes the poison, right?"

Justin: The dose makes the poison.

Sydnee: Mm-hmm.

Justin: Too true. So, uh, did they give it a shot?

Sydnee: Well, they did, Justin. Before we talk about that… let's go to the billing department.

Justin: Let's go!

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Justin: Now, Syd, uh, we were about to start giving this stuff a whirl.

Sydnee: Okay. So, it's the 1500's.

Justin: Whoa!

Sydnee: There—there is this—as I've already mentioned, there's this battle waging as to whether or not [holding back laughter] people should be eating poison. [laughs quietly] Um, is it better than putting a leech on you? Ah, who knows.

But, uh, it—it is so controversial that, in fact, in France for instance, a lot of physicians were so concerned about people using these poisonous substances that antimony had actually been, like, banned by royal decree.

Justin: Wow!

Sydnee: Um, but Paracelsus and his writings and his influence convinced a lot of people to—maybe we should be trying these things anyway. All these weird toxic substances that he recommends.

So, in 1666, Louis XIV rescinded the decree declaring that you couldn't use it. Uh, because he was cured of an illness with a—a compound that contained antimony. It made—

Justin: Was he?

Sydnee: —it made him throw up a lot and he got better, so…

Justin: There it is! That's all it takes!

Sydnee: That's all it takes.

Justin: In those days!

Sydnee: So at that time, um, antimony started to become very popular. People got interested. Like, "Well, it made the king throw up and get better."

Justin: "I wanna throw up and get better."

Sydnee: "I wanna throw up and get better!" [laughs] We know how popular anal fistulas can get—

Justin: Yeah!

Sydnee: —if the king does it. So if the king's, you know, pukin' up antimony—

Justin: Pukin', yeah. Thank you. Yes, please!

Sydnee: Everybody wants to.

Justin: I'll take two!

Sydnee: Uh, you actually find, um, from 1755, there was a, uh… a speech that—or a writing that John Huxham, the English surgeon, um, gave to the Royal Society. And he gives directions for the preparation and the use of antimony, and he talks about that, like, it's gonna cause some sweating and some vomiting and—and catharsis. But that all of that is—is beneficial if you're sick.

Justin: I mean, what—

Sydnee: This is good. I mean, this was a time for violent cures for violent illnesses.

Justin: What *doesn't* cause those things, you know? [pauses] What doesn't?

Sydnee: Well, medicine that works. Most of the time. I mean…

Justin: Well, some… you know.

Sydnee: Well, that's not even true. *Some* medicine that works doesn't cause that.

Justin: Alright. I can live with that.

Sydnee: Uh, so basically he said, "Yes, these things can be poison, but if you use 'em in the right doses… they'll make you better. So… give it a whirl."

And then it became pretty popular! Especially as a laxative and emetic, so something to make you poop and something to make you puke.

Justin: Both ends. Blow it out.

Sydnee: [snorts] It would just clean you out. And so for fevers of any variety, for any illness—whatever was going on the idea was, "I will purge it from my system with this… sort of toxic compound," right? So you would actually—they would make pills of antimony that you would take, and let it go through you, and clean you out all the way… probably in part because it was toxic to you.

Justin: Right.

Sydnee: It was sort of poisoning you, making you sick. Uh, but it would completely clean you out… and it would come out the other end whole, 'cause you can't digest it.

Justin: Yeah?

Sydnee: And then you would fish it out of the toilet, or… bucket, or… whatever.

Justin: Put it right back on the shelf?

Sydnee: Clean it off and save it for next time.

[pauses]

Justin: That—

Sydnee: Not just for you, honey!

Justin: Well, why would you buy more than one? I—it's fun to—it's good, though. If you're in a big house, you color code your antimony. So you know, like, that one's dad's. That's the one he takes when he is… uh… very ill, to make him poop and throw up at the same time.

That is also—

Sydnee: [laughs]

Justin: —I don't like… I—

Sydnee: You—what do you like about this? [laughs]

Justin: I don't like anything about it! I d—I always get tickled, though, by medicine that's like… "Hey, you wanna come see a movie this afternoon?"

Like, "No I don't. I actually just swallowed my antimony so, like… Victoria, clear my calendar."

Sydnee: "That's my day."

Justin: "This is *my* day today. Is just sitting and, like, waiting for this whirlwind that I've reaped to, uh… to just level my home."

Sydnee: To just pop out the other end.

Justin: Yeah.

Sydnee: Um… so you—

Justin: It's good value, though. It's like an everlasting gobstopper.

Sydnee: [laughs] So you could take it again and again.

Justin: Everlasting—

Sydnee: [simultaneously] You could share—

Justin: —hold on, I'll get it. Everlasting… poopstarter? Is that something?

Sydnee: Uh—you're gettin' there.

Justin: I'll find it.

Sydnee: Keep working on it.

Justin: I'll find it.

Sydnee: Uh, so you could share it with your family and friends. In fact, these things could be passed down from generation to generation, treasured family heirlooms.

Justin: [snorts]

Sydnee: "This is the pill that came out of your great-great-grandpa's butt. And now…"

Justin: "[wheezes] And now it's gonna come outta your butt."

Sydnee: "Mom, please, no! Please, mom! I don't want it!"

"Nope, no."

Justin: "No."

Sydnee: "If it was good enough for great-great-aunt Susie, it's good enough for you!"

Justin: "No."

Sydnee: "Open up!" Um, also, it may have… antimony may have killed Mozart.

Justin: Oh, no!

Sydnee: Apparently he was a hypochondriac. I didn't know this. And so he—he often would—would be afraid that he was ill in some way and take treatments, and he used antimony a lot.

Cooper: [babbles]

Sydnee: Maybe so much that it killed him. We don't know!

Cooper: [continues babbling]

[pauses]

Sydnee: Uh, so…

Cooper: [babbles]

[extended pause]

Sydnee: Because antimony was prized, uh, you would find other ways to—to make things out of it. And antimony's actually—it's good to know—

Justin: Like, crafts?!

Sydnee: Well, like, goblets and jars and things.

Justin: Oh, okay.

Sydnee: You could store things in it and then, I don't know, get some of that good, good… element in your…

Justin: Yeah.

Sydnee: … whatever. In your wine.

Justin: It's good for what ails you.

Sydnee: Um, but it actually is not—like, if you see something—

Cooper: [babbles]

Sydnee: —you'll find things that are supposedly made out of it. It's usually an alloy, 'cause it's actually a fairly brittle metal, so you can't—

Cooper: [babbles]

Sydnee: —it's hard to make something out of it alone. Uh, so in addition to doctors, there was another group that was a big fan of… really any of these kinds of toxic substances, and trying to do things with them; and those were alchemists.

Antimony was very popular among alchemists. Um, in particular the German alchemist Johann Tholde. Uh, told the story that—and I guess he was kind of a famous… charlatan of sorts.

Justin: Mm-hmm?

Sydnee: So he said that at a local monastery there was, like, a bolt of lightning that split open this pillar, this marble pillar—

Justin: [holding back laughter] Okay?

Sydnee: —and all of these—all of these old texts that no one had found before came out and—and he collected them, and this was the basis for all kinds of, um… [hesitantly] al… chemical…

Justin: Alchemical, yeah.

Sydnee: Yeah. Uh, advice and—and theory. Um, in particular there was one written by a monk, Basil Valentine, that had a—

Justin: Nice! What?

Sydnee: [laughs] This is probably a made up person.

Justin: Okay, yeah.

Sydnee: This is all probably fake.

Justin: You gotta—hey, listen… m—my fellow. You gotta come up with more believable monk names than that. You can do better, I think. [mockingly] Than *Basil Valentine*.

Sydnee: So—so he had a lot of, uh, secret recipes in this book, alchemy recipes, and antimony was a main component of them. Um, but that was also because—probably because he was already—like, they already had strong beliefs in this, so how convenient. They found this ancient text that supported all of the things they were already saying.

Justin: Believe it or not.

Sydnee: Uh, he was part of the Rosicrucians, the society of the Rosicrucians. Like, an ancient society that got into alchem—alchemic—alchemy, and all kinds of various magical things, in addition to actual, like, academic study? I don't know. Anyway…

So, he used this to promote his—his beliefs, and a lot of this was probably fraudulent. Um, but it influenced a lot of scientists moving forward who dabbled in alchemy, including Sir Isaac Newton. Who bought into this so much, he actually

devoted—in his career, Newton devoted more time to studying antimony than he did to studying gravity.

Justin: Wow. And he created gravity, so that… should tell you somethin'.

Sydnee: Well… he didn't cre—I mean, he didn't create it. But… [pauses] uh, if you—if you care about this kind of thing, I think this is kind of interesting. As a side note, the alchemical symbol for antimony is—if you look at it, its like the upside down symbol for female. You know, the circle with the plus?

Justin: Yeah.

Sydnee: It's that flipped around. Um, because I guess in alchemy various elements they kind of will ascribe, like, human characteristics and personalities to them, and it's thought to be a very feminine—

Cooper: [babbles]

Sydnee: —element, [through laughter] for whatever reason. So it's very girly. I don't know.

Justin: [laughs]

Sydnee: In case you—in case you—I saw it and I was like, "Hey, that looks sort of like the female symbol." And then I read about it and I was like, "Ah! That's intentional."

So. uh, the other medical use that arrived for antimony, which was—this actually only dates back to—I think 1910 is the first time people started doing this, and then in the 1930's it became an official treatment—is for different parasitic infections.

So, they found that antimonials, um, drugs derived from antimony, could be helpful in the treatment of two things at first: leishmaniasis and schistosomiasis. Now, we use other medicines for schisto now, but leishmaniasis we actually—one of the treatments that is still in use today… is an antimonial compound.

Justin: Wow!

Sydnee: A couple of 'em. Uh, sodium stibogluconate—

Justin: Now what is that? Leisto—leishtomiosis?

Sydnee: It's a parasitic infection.

Justin: Okay, got it.

Sydnee: And, uh—and meglumine antimoniate. But they're two different, um, antimony-based medicines that are still used in combination with other things, because they're actually finding some resistance to these things. Um, the first one, Pentostam, is important to know.

It's also—there are lots of side effects to these medicines. That one is very toxic to the veins. It's hard—you inject it, and it can really destroy the veins that you inject it into. Um, and it has all kinds of side effects. Like—like pancreatitis and nausea and vomiting, diarrhea, joint pains, dizziness—I mean, they're very toxic compounds, but they are—they are still used as medications for this very serious infection that people can get that is very hard to treat. And so you often have to use a combination of a lot of medications that some of them obviously have very unpleasant side effects.

Um, we do have, like I said, other drugs for schisto now. we don't use that. But for leishmaniasis you'll find it still listed.

Justin: Huh.

Sydnee: Um, other than that, antimony is mainly used—like, 70%, I think, of its use today is as a flame retardant. [laughs quietly]

Justin: Okay. Not a medical application, necessarily.

Sydnee: No… it's got some other industrial kind of applications as an alloy in, like, bearings and batteries and things like that. Um, not a huge part of the pharmacopoeia, as it were, today.

Justin: [laughs]

Sydnee: Um, you will find it listed—I found—there was this great site where they just list all the different elements from the periodic table. And, like, they have pictures of different uses of the element, ways that it can appear, and then

things… uh, like I found some of the goblets and jars and things that were supposedly made out of antimony, or in part made out of antimony, um, on the site.

And they also mention, like, here's some things that are supposedly medicinal that will include antimony in its medicinal properties.

For instance, Himalayan salt lamps. If you look at all of the things that they supposedly contain, antimony is usually listed. Um, Himalayan salt in general—like, there was one specifically that listed 84 different… quote unquote "natural organic elements" that they—that they were comprised of, and among them was antimony. I will mention that in this particular Himalayan pink salt product, they also named Plutonium and Neptunium.

Justin: Okay?

Sydnee: Which not only do you not—I mean, you don't need those. In case… do I need to say that? You don't need that in your body.

Justin: No, got it.

Sydnee: They're also not naturally occurring?

Justin: So…

Sydnee: Except for, like, nuclear fallout.

Justin: Right.

Sydnee: I guess if—is that… ?

Justin: I guess!

Sydnee: Is that natural? [laughs quietly]

Justin: Technically?

Sydnee: I don't think that's what they mean. Um, and there was also—I found an immune boosting supplement that supposedly contains… I don't know. Like, 77 different elements that you need.

Justin: And one of 'em's antimony?

Sydnee: Yeah. That's one of 'em. They also include thallium, which is poisonous, and tellurium, which will make you smell like rotten onions.

Justin: [wheeze-laughs]

Sydnee: Um, but the good news is that there's such a small amount of all these things in these pills that they just do nothing, probably.

Justin: I feel like you kinda fell down a rabbit hole at the end of researching this episode, Sydnee. Is that fair to say? Maybe?

Sydnee: I just found these weird things that—I was just, like—

Justin: [laughs]

Sydnee: I think somebody—I think some of these fake medicines that people make, they just, like, Google, like, "What has ever been used as medicine?" and then they make a list of those things, and stick them in pills and go, "This has ancient roots!"

Justin: "Imagine"

Sydnee: "Paracelsus was a fan."

Justin: "Paracelsus used this great… [holding back laughter] poopy pill."

Sydnee: "[holding back laughter] Pa—Paracelsus was a big fan, and he said, 'I am different. Let this not upset you.' So."

Justin: Um… yeah, that t-shirt, coming soon. Um, okay. Well, folks, that is gonna do it for us. I don't think my child will tolerate me holding her any more. Uh—

Sydnee: She is not cooperating this episode!

Justin: She's not cooperating this episode.

Sydnee: She's supposed to be our third, silent host, and she has much to say today.

Justin: She has a lot to—well, she was supposed to be sle—asleep host, and then she decided halfway through that she was not going to do that anymore.

Uh, but thank you so much for listening. Uh, thanks to The Taxpayers for the use of their song "Medicines" as the intro and outro of our program—

Cooper: [babbles loudly]

Justin: [through laughter] Thank you—

Sydnee: She's not thankin' anybody.

Justin: No, she's all—no, no way. She's ungrateful. Uh, thanks to the Max Fun Network for having us as part of their extended podcasting family, and thanks to you for listening.

[theme music begins in the background]

Justin: Uh, that is gonna do it for us this week, but 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 gets louder before abruptly stopping]

Sydnee: Oh, wait, wait, wait, one last thing! It's really cool, I promise.

Justin: Okay.

Sydnee: The name "antimony" may actually mean "monk killer." Maybe.

Justin: Okay. Can I play the music now?

Sydnee: Yeah, go ahead. Sorry.

[theme music plays]

*****

[chord]

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