

Sawbones 313: How Yellow Fever (Nearly) Destroyed Philadelphia

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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'm your co-host Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: Well Syd, uh... There's nothing we love... Uh, here on Sawbones more than a combo.

Sydnee: That's true.

Justin: We used to have these combo streaks that would last like 3-4 episodes long. So last week, as we were talking about Quarantine, through the lens of Coronavirus, you stumbled upon a story of a different sort of quarantine—

Sydnee: Well, sort of.

Justin: Sort of—

Sydnee: Quarantine is one aspect of it.

Justin: Right.

Sydnee: As I was looking through different examples of quarantining events— Quaran...

Justin: Quarantines?

Sydnee: I guess just quarantines. [laughs]

Justin: Yeah, I love that.

Sydnee: [laughs] I'll just make up some new terms while I'm talking there.

As I was looking through examples of quarantines, I stumbled across one that I had never heard of, and it led me to the story of a certain episode of, like a disease outbreak in American history that is a pretty famous one. And somehow we've never talked about, and...

I don't know. I wasn't really... I was vaguely aware of the concept of this sort of thing happening at this time period, but I did not know this exact story.

Justin: We have performed in this city multiple times—

Sydnee: That's right

Justin: And never happened upon this specific incident.

Sydnee: No, and I had the moment where I thought if we're gonna go back to Philadelphia, I should save this story for when we go there. But then that seemed silly, to not talk about it, in the hopes that eventually we'd go back to Philadelphia, and wait until then.

Justin: Well listen, we'll be back to Philadelphia.

Sydnee: Oh I know we will, but...

Justin: They got these Amish donuts there— [clicks tongue]. Knock your butt right off your face.

Sydnee: This was such a good story though.

Justin: Okay.

Sydnee: So I wanted to talk about the Philadelphia yellow fever outbreak of 1793.

Justin: It seems like Gritty probably started it.

Sydnee: [laughs]

Justin: I don't know how that's chronologically possible, but my early guess is that this is a Gritty... Gritty-centric. Gritty was patient zero.

Sydnee: I'm gonna guess that you don't know much about yellow fever, if that's your theory.

Justin: Okay.

Sydnee: I don't think we've talked much about yellow fever on this show.

Justin: No.

Sydnee: No.

Justin: No.

Sydnee: Uh, one, um... So the thing about yellow fever— And this is probably one of the most notable outbreaks, although there were... There was a time when yellow fever outbreaks were not uncommon in the United States—

Justin: Fun times.

Sydnee: And we think about—

I think a lot of us Americans think about yellow fever as like a tropical disease; It doesn't happen here. It still occurs very frequently in parts of Africa and South America, and it's not gone. We're not talking about smallpox, here.

Justin: Yeah.

Sydnee: This has not been eradicated.

Justin: I would guess that a lot of us Americans have fully formed and cogent opinions and thoughts on yellow fever. Much like myself—

Sydnee: [laughs]

Justin: An everyday American.

Sydnee: Do you... I got the vaccine—

Justin: Syd—

Sydnee: Like I have had the yellow fever vaccine because I went to Malawi—

Justin: Squid.... Listen. Listen— Are you listening?

Sydnee: Yes?

Justin: Do you remember earlier when you said that we have not done much on yellow fever?

Sydnee: Yes?

Justin: What that translates to, one-to-one—

Sydnee: [laughs]

Justin: Is that I don't know anything about yellow fever. I'm a blank canvas, okay?

Sydnee: Okay. Okay.

Well... Yellow fever is a virus. I have in my notes it's an RNA virus, as if you would have asked me "Is it a DNA or an RNA virus?"

Justin: Sorry, I wasn't listening to what you just said a sentence ago. I did have a question before we move on?

Sydnee: Mm-hmm?

Justin: Is it DNA or an RNA virus? [laughs]

Sydnee: [laughs] It is spread by mosquitos.

Justin: I had a mnemonic device to remind me. Let me see if I can—

Sydnee: Do you? Uh-huh. [affirmative]

Justin: Yellow fever is... R-R-R... N-A is not applicable, so the R is—

Sydnee: Red not applicable, it's yellow.

Justin: Red not applicable, it's yellow. Fever.

Sydnee: Virus.

Justin: Yeah, got it.

Sydnee: Got it. Uh, so it's spread by mosquitos. Usually the Aedes type of mosquito. It's a Flavivirus.

Justin: The 80's type of mosquitos—

Sydnee: "Aedes".

Justin: It's got the little—

Sydnee: Aedes. Aedes. A-E-D-E-S.

Justin: Little neon scrunchie, and jean jacket.

Sydnee: Uh-huh. [affirmative] [laughs]

It's related to viruses like West Nile. You've probably heard of West Nile Virus.

Justin: Mm-hmm. [affirmative]

Sydnee: That was very big in the media for like five minutes, a while back.

Justin: Right, I remember that. We were all very upset at mosquitos.

Sydnee: [laughs]

Justin: Which we should be, all the time. They are the most dangerous animal on Earth.

Sydnee: They are. We should all be very scared of mosquitos. No, don't be scared. That's not productive.

Justin: Well we should be upset about mosquitos.

Sydnee: Be... Be cautious.

Justin: Uh-huh. [agreement]

Sydnee: And aware. And vila-vigilant.

Justin: If you see some—

Sydnee: Or "Vilagant". That's not a word. But be vigilant.

Justin: If you see `squito, say `squito.

Sydnee: [laughs]

Justin: That's my rule.

Sydnee: It is transmitted between monkeys and mosquitos, and then occasionally a human wanders into the jungle—

Justin: Oops.

Sydnee: And gets in the midst of this cycle. And then, then it's transmitted at that point from human to mosquito to human, to mosquito, to human.

Justin: Thanks for nothing, Tarzan!

Sydnee: So it's one of those— You can see why back in 1793, it would be tricky to figure out how it was spread, because it really is something that— It takes you a minute to... It's not...

If you and me are sitting in the same room, and I have yellow fever, you're not gonna get yellow fever from me unless there's also a mosquito in this room. And then it is necessary for the mosquito to first feast on me, and then feast on you.

Justin: Mm-hmm.

Sydnee: For you to get it. That's a tricky transmission, if you— I mean like it seems common sense now, because we know that—

Justin: Yeah.

Sydnee: A lot of things, Malaria being probably the biggest example, are spread—

Justin: Because that would've been quite the like—

That must've been quite the like, pull when they actually did finally figure that out.

Sydnee: Mm-hmm. [agreement]

Justin: Because what a wild x-factor that is.

Sydnee: It's a big, it's a big breaker.

Most people who get yellow fever virus will not know. I think that's something that we never talk about with viruses, is how often a lot of people will get something and never know they got it. And we could check and see that they've had it before, but... You just didn't get symptoms.

Justin: Hmm.

Sydnee: I know. It seems strange. You feel like everybody should get sick with something, but—

Justin: Especially when you look at a virus and they look like this weird... Diamond heads, with their little, weird little spindly legs. They look very... Dangerous.

Sydnee: That's a bacteriophage.

Justin: Yeah. Tomato, tomato. But—

Sydnee: Yeah. Well, most don't look that way. Those are very impressive viruses, I agree. They look very scary and cool.

Justin: They're on your cover of "Virus Beat: Hunky Viruses That We—"

Sydnee: [laughs]

Justin: "That We Are Crushing On, Hardcore".

Sydnee: I do have a necklace with a little bacteriophage charm cause they're very cool.

Justin: Yeah.

Sydnee: But, uh... But most, unfortunately— Unfortunately, most don't look that way.

Some people will develop symptoms in about 3-6 days after they're exposed. They'll get fevers, chills, headaches, back pain, body aches, nauseous, vomiting, fatigue, feel weak, that kind of thing. It lasts about a week for most people, and then usually they get better, although some people it can go on longer.

Um, but for about 1 in 7 of the people who get sick— So already like most people who get it won't get sick. Some percentage of those people will get sick, and then 1 in 7 of those people will seem to get better for a day or two. Like the week will pass, and you'll think "Wow, great! I got better. Yellow fever: Over." But then things get really worse.

Justin: Hmm.

Sydnee: You get the fevers back, but now your liver is affected. That's where the yellow comes in, you become jaundiced. You can turn yellow. Um... Your organs can fail. You can have, because your liver is involved, you lose the ability to clot your blood.

Justin: Hmm.

Sydnee: So, it can be a very dramatic... Uh, in to the disease process, because you start bleeding. A lot. From a lot of places.

Justin: Mm-hmm.

Sydnee: Um, much like— It's not like Ebola, but reminiscent of why people were so afraid of Ebola. Ebola does not cause you to disintegrate, by the way.

Justin: I don't know who would've said that kind of thing.

Sydnee: Yeah, I don't... Maybe a world leader, perhaps. Maybe a world leader that we may be familiar with in the United States of America.

But anyway, it does not cause you to disintegrate, on a side note. But it can— Yellow fever can cause you to die, and about 30%-60% of the people who get this, this very severe complicated course, will die.

Nowadays we don't, like I said, we don't see it here, but it is still a big issue in other parts of the world. In parts of Africa and South America. But back in the 1700's, especially in the newly formed U.S, you would see it. Fairly frequently, because a large part of that was that a lot of people were coming to the United States and we didn't have—

So in order for you to have the... The um, breeding grounds for the mosquitos, that's the key here. What you really need are a lot of like pools of stagnant water.

Justin: Mm-hmm.

Sydnee: So you gotta have the right kind of mosquito, which could survive— Which can. Did and can survive in...

Justin: Amber—

Sydnee: These climates... No.

Justin: Oh.

Sydnee: [laughs] Climates, these climates.

Justin: Sorry. Yeah, that makes more sense.

Sydnee: Uh, you have to— You have to have, you know, you have to have the right mosquito, which we can have in this area of the world. And you have to have places for that mosquito to breed, and so like that's why you see the association with parts of maybe the developing world, where like water sanitation isn't always at it's best.

Justin: Mm-hmm.

Sydnee: And so like if you look at, right now we're focusing on Philadelphia... There were all these marshy, swampy areas that were great for mosquitos. And then when you look inside the cities themselves, in early colonial America and then in early, you know post-revolutionary America, you have... Just... I mean, things weren't clean. You didn't have like sewer systems, that you had just like... Water, just standing stagnant.

Justin: Yeah.

Sydnee: Water.

Justin: Standing water is always, is— Is such a problem. I wish we'd realized that one earlier.

Sydnee: Yeah. Well, in—

Justin: Back in those days, you would just get stoked because hey! Free water.

Sydnee: [laughs]

Justin: That, I mean it's amazing.

Sydnee: And you didn't know about germs. If it looked dirty, you might not want to drink it, but if it looked okay, you wouldn't know.

Justin: Either way, I mean free water. In those days, are you kidding me? For like... It's free. Any— [laughs]

"Hey, excuse me! Is this water just for anybody?"

Sydnee: I don't think—

Justin: "Cause it's just here. Okay, I'm taking it."

Sydnee: No even then, if water looked obviously dirty, most people wouldn't have been drinking it. You see?

Justin: It's free, Syd!

Sydnee: But we didn't understand microbes.

Justin: It's wild to not take it, it's free! It's right there. Anybody...
[crosstalk]

Sydnee: But the yellow fever wasn't in the water, to be clear.

Justin: Mm-hmm.

Sydnee: There were things in the water; Cholera, was in the water.

Justin: It was in the water?

Sydnee: But though yellow fever wasn't in the water. The yellow fever was in the mosquitos, but the mosquitos lay their eggs and breed on the water. So that is key. One of the number one things you can do to reduce mosquitos and therefore the infectious diseases they carry, in an area, is just... Remove standing water.

Justin: Take it home with you. It's free.

Sydnee: Well— [laughs] Just don't leave things sitting around like buckets with standing water in them.

[laughs]

Justin: Listen, you got a free bucket—

Sydnee: [laughs]

Justin: Now— [laughs]

Sydnee: Now you're talking!

Justin: Now you've got a stew going!

Sydnee: So the beginnings of this epidemic, uh the beginning was a ship. That is the thought. That is the— It was traced back um, and you know we could—

It's been pinned on like they think a specific ship, with people from a specific part of the world that came to Philadelphia. Lots and lots of people were coming in and out, though. It was a very active port.

Justin: Mm-hmm.

Sydnee: You know? From a lot of different places. And so again, this is the—

And there were a lot of other places in the world where yellow fever was a problem, so the idea that we know exactly who brought it... Maybe, maybe not, but...

There were a lot of ships that docked in Philly from Africa and the Caribbean, and places where there could have been at any given point in time, active outbreaks of yellow fever. Um, this particular ship they think came from the French Caribbean colony of Saint Domingue, which is now Haiti.

Justin: Hmm.

Sydnee: And they at the time, the timing sort of worked, that there was a yellow fever outbreak in what is now Haiti, at that time. And so there were a lot of people who were there fleeing a revolution that was occurring, and then also anytime there's upheaval, you're gonna see the spread of these kinds of infectious diseases, so probably also this yellow fever epidemic.

All of this was going on, so a lot of people came to Philadelphia... Probably some of them were carrying yellow fever.

Justin: Mm-hmm?

Sydnee: Perhaps there were even some mosquitos.

Justin: Yeah.

Sydnee: Flying around on board. There's probably some pools of stagnant water in the ship. There often were.

Justin: Pft, yup.

Sydnee: So—

Justin: That's ship life, though.

Sydnee: Uh, so the— And the city, like I said, was surrounded by swamps and marshes. The dock creek... Uh, was this open— Was like a sewer, and it was an open sewer, that was right there—

Justin: [laughs] You know it was a bad sewer because it was called a creek!

Sydnee: [laughs] Um—

Justin: It's right there in the name! It's not called "The Dock Sewer"!

Sydnee: You... As far as like your waste and stuff in Philadelphia at this time— And not just, I'm not just knocking on Philly, like in... A lot of major American cities, —

Justin: Yeah. All.

Sydnee: Uh, you had holes dug in the ground, where you would just throw waste. Um, or like animal leftover-bits, and stuff. And—

Justin: "Oh that, over there? That's the yuck-hole!"

Sydnee: [laughs]

Justin: "Don't go near it!" [laughs]

"That's where we put all of the yucky things."

Sydnee: And it well— I mean, you would want to fill it up I guess, before you had to go through the trouble of digging another hole—

Justin: Right next to it.

Sydnee: And so, you would leave it open, and then rain would collect in it, um so— And then you also collected rain water, at the time. I mean like, we didn't have plumbing, right? For the most part. So you collected rain water in barrels.

Justin: Mmm.

Sydnee: Outside. So what I'm painting for you is the picture of... We have these people coming, who have yellow fever. We've got mosquitos that can carry yellow fever. We've got lots of standing, gross water everywhere—

Justin: Yellow fever... Prime. Prime for it.

Sydnee: It's perfect. It was primed for yellow fever, and on top of that, it was August and the summer had been very dry. And as a result, the water table was really low. So you have even more like, shallow pools of water surrounding the docks, right where these ships were coming in.

So as people got off and mosquitos bit them, and transmitted it to other people, and then went and laid their eggs— You know. You get the idea. There's mosquitos everywhere. So they feasted on the infected passengers, they carried the infection out with them... To Philadelphia.

Justin: Okay.

Sydnee: To the people of Philadelphia.

The first person to die, Peter Aston, was examined, and thought "Well, we're heading into the fall." And the fall was known to be a time— Again, this was back before we really understood infectious diseases very well.

Justin: Mm-hmm. [agreement]

Sydnee: Um, the Miasma Theory was still very popular. That like bad air...

Justin: It was around. [crosstalk] —

Sydnee: It was just around, like bad airs and smells and things—

Justin: True.

Sydnee: Would like seep into an area, and that if you could waft the bad air out, fight it with good air, then you wouldn't get sick. So, this was a time of year where, you usually started to see the fevers, the fall fevers. The autumnal fevers. And those could've been any number of different infectious diseases, um, that started as the weather started to get cooler.

And so at first, they thought this guy had just died of... One of the—

Justin: Fall fever—

"Hey, that's fall for ya!"

Sydnee: Fall fever! [laughs] Uh—

Justin: "Anyway, put him in the yuck-hole!"

Sydnee: But within just a few days, several ore people had died of a similar fever. And it's again, because if you get the most complicated course of yellow fever it is a very dramatic... End. Um... With a lot of the— One of the— And I think we mentioned this can occur with Ebola, too—One of the most notable is the black vomit, that can occur at the end.

Justin: Yeah, that's very dramatic.

Sydnee: Because you're hemorrhaging.

Justin: Yeah.

Sydnee: And vomiting, and so— And so because of that, it was notable. And it called the attention of Benjamin Rush, who we've talked about before, one of our founding fathers. Father of Psychiatry. Notable physician who did... Some whack stuff. [laughs]

Justin: Some, some whack things!

Sydnee: Who has some good ideas, and then... Some bad ones!

Justin: Some bad ideas, yeah!

Sydnee: Some bad ones. Uh, it caught the attention of Benjamin Rush, who examined the patients, recognized the pattern as one that he was unfortunately familiar with, and announced to the terrified public that yellow fever had indeed struck Philly.

Justin: What happened?

Sydnee: Well, I'm gonna tell you what happened... But first let's go to the billing department.

Justin: Let's go!

[theme music plays]

[ads play]

Justin: So, Syd... Benjamin Rush has just made this disturbing announcement. So what happens next?

Sydnee: Well, general panic. [laughs]

Justin: Oh no. Aw beans.

Sydnee: So, everybody freaked out. Everybody was terrified. Philadelphia at this time had around 50,000 people, um and they were crammed in pretty close together. Like they were— They were all on top of each other. Uh so... You know. You'd have no idea how this disease spreads... People are living close together. People are dying in a scary, dramatic fashion. Um... They had no idea that the mosquitos were involved. Nobody... Knew how to stop it.

Justin: They're all— They're all laughing to themselves.

Sydnee: [laughs]

Justin: The mosquitos are like "They've got no clue! Perfect crime."

Sydnee: And people got sick very, very quickly because nobody had any effective strategies as to what the heck do we do to stop it. Some people would go hide inside. Some people just locked their doors like "I was prepping for this. I've got two weeks of canned food. I'm ready."

Justin: "Lots of standing water that I found—" [laughing]

Sydnee: [laughing] Lots of standing water!

Justin: "It's like the, it's like the little girl in 'Signs', in here! It's just full of standing water as far as the eye can see!"

[still laughing, then coughs because he's laughing so hard]

Sydnee: "I've got plenty of mosquitos in here— "

Justin: "Yeah!"

Sydnee: "So that's good."

Justin: "I've got my family of mosquitos to keep me company and entertain me, and I've got plenty of standing water."

Sydnee: Uh, my many others decided, uh "Screw this noise. I'm getting out of here." Over all, throughout the course of this illness, about 20,000 people would run from Philadelphia.

Justin: Hmm.

Sydnee: There were 50,000 people in the city!

Justin: That's so many people.

Sydnee: That's so many people! So at the time, congress of course, was meeting in Philadelphia, at this point in history. It was 1793.

Justin: Right.

Sydnee: So, congress said... "We out."

[laughs]

Justin: "Yeah, we're actually not gonna stay here, either."

Sydnee: "We're— We're actually done, Philadelphia!"

They moved out to Germantown, and uh after their—

One morning a body was found lying on the State House Steps, pretty much all of the other government officials left too. In a sense, the government of Philadelphia collapsed.

Justin: Yikes.

Sydnee: During this outbreak. I don't mean to say like... That was it, that was the end of Philadelphia. There never was a Philadelphia again, but like I don't know— [laughs]

Justin: Clearly, that's not true.

Sydnee: If the government isn't there...

Justin: Can you even call it a Philadelphia?

Sydnee: [laughs] I don't know what— I don't know. Does it exist?

Justin: It's just a loose confederacy of Philly's fans, at that point.

Sydnee: [laughs] Everybody ran! The hospitals had trouble keeping staffed. They— There were obviously a lot of— There was a lot of illness among people taking care of the sick. They were overwhelmed quickly with the sick and people dying, um and doctors and nurses started leaving, because... In a sense, it was futile, they felt.

They were working to try to take care of these people. They had no idea why they got sick, or what this sickness was, or what to do about it. I'm gonna get into some of the treatments and you'll see why they were... Highly ineffective.

And so, did you... They didn't want to just stand in the hospital and watch people die of a terrible thing. So a lot of them—

Justin: And then wait to get it themselves.

Sydnee: Right. So a lot of them unfortunately left.

Now Benjamin Rush— And we did a whole episode on him in the past, and so you can revisit that if you don't know why he's kind of a... I don't want to say controversial figure. Most people tend to really like him. He just, he— He was a physician very typical of this time period, in that he did a lot of things that were not... Really helpful.

Justin: Did right.

Sydnee: Or evidence based, because nobody really knew what evidence was.

Uh, but he had no intention of leaving, to his credit. I will say that even though he had no real understanding of what the heck to do about yellow fever, he was courageous enough to stay and take care of people to the best of his abilities. And he did try. The number one thing that Benjamin Rush liked to do to people was bleed them.

Justin: A classic.

Sydnee: Now in a disease that could end with uncontrolled bleeding, I could see where this would seem like a bad idea.

Justin: Mm-hmm. [agreement]

Sydnee: And yes, it was a bad idea.

Justin: [laughs] Correct.

Sydnee: So he bled people profusely. He thought that something that would make you poop a lot was a good idea, and so he gave people a lot of mercury-based compounds and things that would—

Justin: Yeesh.

Sydnee: Lead to diarrhea. Um... He uh... He was a proponent of the Miasma Theory of disease, and he— Because of that, I will say even though his initial ideas to what could've caused it was wrong, he actually thought it had to do

with some coffee? There was a shipment of coffee that had been left at the Arch Street Wharf that was rotting. There was a big like rotting, putrid... I imagine this giant pile of coffee grounds, but that can't be right. [laughs]

Justin: Can't be right. It's like it can't come over—

Sydnee: [still laughing] In my head, that's what it is!

Justin: It can't come over ground. That doesn't make any sense.

Sydnee: [laughing] In my head, that's what every— I've read this several times from different sources, that—

Justin: At least in my mind, I imagine a big ol, like Shel Silverstien pile of coffee.

Sydnee: [laughs] A big ol pile of Folgers—

Justin: Yeah—

Sydnee: Just rotting on a dock. But there was a big pile of coffee rotting... At a dock, and that is what Benjamin Rush thought was responsible for the illness, because of the Miasma Theory of disease. That we have all this rotting coffee and it's gross and it smells and it's spreading this bad air, throughout the city, and that um—

Justin: Do you think he just had days where he stood next to the big pile of coffee and was like "Can we just all, for a sec..."

Sydnee: [laughs]

Justin: "If you want to take ten minutes with me and just clean up the coffee, this whole thing would be fixed. Just— I'm gonna get a broom. You, Doug, get a broom too. Let's get rid of this old stinky coffee."

Sydnee: "Let's just sweep it into the water that we drink."

Justin: "Sweep it into the yuck-hole."

Sydnee: [laughs] Uh, so... And this was— I will say that the other ideas that he came up with, because he thought... Because of this miasma theory and because he thought it had to do with this rotting coffee, a lot of the things he proposed were like, you know, all these unsanitary conditions, like all this open sewage and these rotting things like coffee or vegetables or

whatever they were around the docks, and all of this. If we could clean all this up, it would probably be more— It'd probably be better for us. And—

Justin: Good instinct.

Sydnee: That's true. I mean these were true, even though he didn't understand why. And I mean compared to other, you know, leading thinkers of the time who were like "I don't know, just... Say some prayers."

Justin: Yeah.

Sydnee: "Cause this is a curse upon us."

At least this was an action people could take.

Justin: Something to do, yeah.

Sydnee: You know? Um... And so he did you know... Tell people we need to clean things up and things like that, that probably... That was probably a good idea. He did recognize that weather played some part in it. And he was one of the first, like when it gets colder for some reason, it seemed to go away?

Justin: Mm-hmm?

Sydnee: Which... Would be true because the mosquitos die.

Justin: Mosquitos, yeah.

Sydnee: But then he also said he didn't think it was spread human to human.

Justin: Fair.

Sydnee: An intriguing— True. An intriguing point.

Justin: Mm-hmm. [agreement]

Sydnee: Not directly human to human. Um... Because many people blamed this one ship... You know, and these refugees for the infection, there was a lot of anger and um, violence directed at people who would come in from what is now Haiti.

Justin: Mm-hmm.

Sydnee: And, he was— Rush was actually pretty quick to say “That’s not... One: That’s not helpful, and Two: They’re really not the problem.”

Justin: Right.

Sydnee: “The problem is our city stinks and is dirty and gross.”

Justin: “And all of the mosquitos in the water, everybody loves.”

Sydnee: [laughs] “All the yuck-holes. That’s our problem. It’s not people coming here, and you need to stop blaming them.”

Justin: Mmm. Good, that’s something.

Sydnee: Yeah. Again, revolutionary idea. Um... He, uh— So he advocated for cleaning up the docks, get all the bilge water out of ships. So all the stagnant pools of water that sat in ships. Clean the sewers, wash the streets, get—

Justin: Not the really nice stagnant pools of water, like the collector’s items, right? There’s some of them, they’re saving for later.

Sydnee: [laughs] For, just to show their friends.

Justin: “That stagnant pool was a gift from my mom, so I’m not gonna throw that away!”

Sydnee: [laughs] He said maybe we shouldn’t build our houses so close together. [laughs] Maybe we should empty our toilets more. Now, there—

Justin: That’s easy for you to say, Doc!

Sydnee: [laughs] There were other recommendations that weren’t quite as helpful, that were tried throughout the time. Some of which were proposed by Dr.Rush, and others were— There were other physicians still in the city. Not many, but there were some other physicians.

Um, smoking tobacco was thought to be helpful.

Justin: Always is.

Sydnee: [laughs] Clean your house with vinegar, or clean a person with vinegar.

Justin: Just to pass the time, or?

Sydnee: [laughs] No, to try to stave off the fever.

Justin: Right.

Sydnee: You could carry a tarred rope... No.

Justin: No.

Sydnee: Cover the floors of your rooms with two inches of dirt.

Justin: Okay?

Sydnee: Replace it daily.

Justin: Too much work. Rather have the fever.

Sydnee: [laughs] That— I don't know, yeah.

Justin: You lost me.

Sydnee: Garlic, was thought to be helpful. Chewing on garlic was popular. Which would probably repel your friends, but mosquitos...

Justin: They don't care.

Sydnee: They don't care that much. No. You could hang a bag of camphor around your neck. That was a popular thing.

And um, one... Man, this makes sense, too. [Sarcasm]

Setting off guns in the streets... Setting off gunpowder. Explosions were thought to clear the air, and so that was a popular treatment.

Justin: Mmm. All the miasma?

Sydnee: I just, it's so... [sighs]

Justin: "Shoot the germs!"

Sydnee: "Just—" [laughs] "Shoot some guns!"

Justin: "Shoot it! Shoot the yellow fever! Tell it who's boss!"

Sydnee: Adding to the list of wrong ideas that Benjamin Rush had, he thought— He had this idea that white people were more susceptible to yellow fever than back people.

Justin: Hmm.

Sydnee: And as a result of this belief, he actually wrote an editorial begging the free black community to basically come to the aid of the sick.

Justin: Hmm.

Sydnee: Like, we need... Because— And he wrote from his medical opinion that they were not at risk of getting this, the way that white people were. Which, as far as I can tell, he truly believed. Wrongly.

Justin: Yeah. Right, incorrect.

Sydnee: But truly believed this. So he wrote, you know “Please help. We’re losing doctors, we’re losing nurses. We don’t have anybody to bury bodies. We need help.”

Justin: Mm-hmm.

Sydnee: And as a result of that, leaders of some of the local churches Absalom Jones and Richard Alan, who also started the Free African Society, called upon members of the black community to come forward and act as nurses and caregivers and gravediggers, and moving sick bodies around, and all this.

Um, and they were instrumental in providing aid during this horrible disease outbreak.

Justin: Terrible, but heroic.

Sydnee: Yes. Heroic, but of course unfortunately that was all... Inaccurate.

Justin: Right.

Sydnee: There is no difference. There is no racial difference, in terms of yellow fever. Everybody, when they’ve looked back at the numbers, it was all proportionate, you know?

Justin: Yeah.

Sydnee: To the number of black people in the community, the same number died proportionately as white people. But they did put themselves in harm’s way to care for the sick, and aid in the care of the sick. And that is

one really important, kind of heroic aspect to the story of this outbreak, is the... How instrumental the Free African Society was.

The city itself, the government came up with a number, came up with eleven different strategies that they proposed. Um, probably all in large part the advice of Benjamin Rush, but other leaders, other medical leaders in the community...

Here's how Philadelphia said "We're gonna deal with this." Which I think is interesting to see how we dealt historically with different outbreaks—

Justin: Yeah!

Sydnee: Since that's kind of what's happening now.

"Um, one: Avoid infected people." Sure.

Justin: Yeah. Good. Always good.

Sydnee: "Two: Avoid fatigue in body and mind. Don't stand or sit in a draft or in the sun, or in the evening air." That's a lot of places. [laughs]

Justin: Yeah, that's so many places.

Sydnee: No draft, no sun, no evening. Got it.

"Three: Dress according to the weather. And drink sparingly of wine, beer, or cider." I don't know why that's all one rule.

Justin: Deal. Yeah.

Sydnee: Dress well, don't drink.

Justin: Dress well, don't drink.

Sydnee: That's rule three. [laughs]

"We put that in one rule."

Justin: Yeah.

Sydnee: "We want eleven!" [laughs] "For some reason, we need eleven of these!"

Justin: "We need to combine these two rules."

Sydnee: "Four: When visiting the sick, use vinegar or camphor." Okay.

"Five: Mark every house with sickness in it."

Justin: Oh, good. That's pleasant.

Sydnee: Yes.

Justin: No chance of that being misused!

Sydnee: No. Wouldn't— I don't think that would fly, here.

Justin: No, I doubt it.

Sydnee: Hmm, not today.

"Six: Place your patient in the center of your biggest, airiest rooms in beds without curtains, and change their clothes and bed linens often."

Justin: Uh, they're halfway to something, there.

Sydnee: I mean, it would— I guess it would be nice.

Justin: It's nice. Well, changing their—

Sydnee: It's not gonna do anything—

Justin: Changing their bed linens often, that's not bad.

Sydnee: For them, no. That's not bad.

Justin: Yeah.

Sydnee: I don't know what you're doing as a city.

Justin: That's fair, yeah.

Sydnee: Like that's a weird— If you think about that this is a, like an ordinance from the city, it's weird.

Uh, "Seven: Stop the tolling of the bells."

Justin: Oh good. Those were getting on my nerves. I'm—

Sydnee: Do you know why?

Justin: Why?

Sydnee: It is thought... Because this is a weird one, right? Why would we stop tolling the bells?

Justin: I don't know.

Sydnee: At once, it says. "Stop the tolling of the bells at once." Because the bells tolled every time someone died.

Justin: Oh.

Sydnee: And I can imagine this would've been panic-inducing if all. Day.

Both: Long.

Justin: The bells are tolling. Oh, yeesh.

Sydnee: So that's why the city did it. It had nothing to do with disease spread. It was panic.

Justin: Mmm.

Sydnee: Uh, "Eight: Bury the dead in closed carriages as privately as possible."

You can see that.

"Nine: Clean the streets, and keep them clean."

Justin: Good!

Sydnee: "Ten: Stop building fires in your houses or on the streets. They have no useful effect." [laughs]

Justin: [laugh] Alright! Come on.

Sydnee: "However, do burn gunpowder."

Justin: Okay.

Sydnee: "It clears the air."

And Eleven, most important of all "Let a large and airy hospital be provided near the city to receive poor peoples stricken with the disease, who can not otherwise be cared for."

Justin: Good.

Sydnee: I don't know how the people of Philadelphia were supposed to do that— I mean like, I guess unless you take it literally "Let it."

Justin: Right.

Sydnee: Like "Don't stop while we're building it." [laughs]

Justin: "Don't stop. Everybody, grab a brick, and come help us build this hospital!" [laughs]

Sydnee: [laughing still] "Come help us build a hospital."

Justin: "Come on! We made a rule about how we need a hospital. Come on!"

Sydnee: "Let somebody do it!"

I like that— Maybe it was like, uh, The Secret.

Justin: It is. They were visualizing. They're putting it out into the world, law of attraction style.

Sydnee: That we're gonna have a lazaretto.

Justin: Yeah.

Sydnee: And they did— Now, um, we talked about the concept of lazarettos in our last episode. Quarantine hospitals. Hospitals set up specifically to deal with like, that outbreak. You know, first it was plague, but now this would have been set up specifically to deal with yellow fever. There was a hospital at Bush Hill that had already been converted into a lazaretto.

Justin: Mm-hmm?

Sydnee: Um, it was actually, it was funny. It was run by like this rich philanthropist, who like opened it to all the yellow fever patients and was like "Here, you will receive the French Treatment."

Justin: Hmm!

Sydnee: And the French Treatment was that you got a lot of wine and lemonade, and we are very clean.

Justin: Sounds good.

Sydnee: It was actually so popular, that after a while people had to start like proving that they had yellow fever before they were allowed in, cause so many people tried to get in. [laughs]

Justin: Gotta get in on that free wine and lemonade.

Sydnee: To— Even though they didn't have yellow fever.

Um... The uh... The outbreak did end, before they were able to establish this brand new lazaretto that they had dictated must be built.

Justin: Mm-hmm.

Sydnee: Because there was an old lazaretto, but it was not functioning very well because it was pretty close to the city, and so the idea is that like... A ship would come in, and make it, like to the city basically—

Justin: Mm-hmm?

Sydnee: Before you'd have to stop at the quarantine station, at the lazaretto. And so there wasn't much point— It wasn't very functional. But before they got the chance to do anything, the outbreak ended because the weather got colder. So October, a bunch of mosquitos died... And the cases started... You know, stopping.

Justin: Yeah.

Sydnee: Started stopping. [laughs]

Justin: [laughs]

Sydnee: Started decreasing. There were some more infections after that, but not very many. Um, and that was kind of the end of worst of the, of the outbreak. Prior to that, the high, the death toll reach was 100 people per day.

Justin: [exhales, surprised]

Sydnee: Overall, about 5,000 people, which was ten percent of the city—

Justin: Oh my gosh.

Sydnee: Died in the epidemic. It was a huge number. Huge number.

Justin: Terrible.

Sydnee: Um, now... Just because the epidemic ended, did not mean that they forgot edict number eleven. That they had to build a hospital.

Justin: It's right there in the rulebook.

Sydnee: So— [laughs] Because of that, uh everybody kind of—

After the government returned, thank goodness, and people stopped setting off gunpowder in the streets, hopefully, they said "You know what? We really need a better quarantine facility to help prevent these kinds of outbreaks in the future, cause we have no idea what caused it but we think it had something to do with a ship—"

Justin: Yeah.

Sydnee: "And the dock, and something that was brought here." So... They constructed a new lazaretto, The Philadelphia Lazaretto, finished in 1799 as a result of this outbreak. This was why it was built. Um, and it was in Tinicum Township, further away. It's like, it's really near the airport.

Justin: Hmm.

Sydnee: It's very close to where the airport is now, in Philadelphia. But it was, uh... It was further from the action, so to speak. And as ships would come in, you would have to stop there and they had like the main building, where you would be like assessed—

Justin: Mmm. [approvingly]

Sydnee: For illness, and like the ship's captain would have to provide evidence of who was on board, and where they came from, and is anybody sick, and what are you bringing, and where is it from, and all that kind of stuff.

And then they had different buildings within the compound. They had a place where, like merchandise and goods could be stored if there was concern. They had a place where um... They had the dead house. You can probably guess what that was for.

Justin: Sure.

Sydnee: You could probably piece that together.

Justin: Grateful Dead fans to come together and swap tapes, and stuff.

Sydnee: [laughs] They had the uh, the Dutch Hospital, which was specifically for German immigrants, at one point. Because of, they had some concern of, I believe it was Cholera.

Justin: Mmm.

Sydnee: But it became known as the Dutch Hospital. Pennsylvania Dutch. German.

Justin: Hmm.

Sydnee: Um... But uh— But they had different buildings on the compound, and it was all run by doctors, and you know, and like quarantine masters whose job it was to try to... If there was something coming on one of these ships that could make people sick, stop it there. Keep them at the lazaretto until... Everybody either got better, or didn't. [laughs] And then let them into Philadelphia.

And what's interesting, is that it has been called the Ellis Island of Philadelphia. So busy was this quarantine station.

Justin: Wow.

Sydnee: Like a third of the American population, their ancestors probably passed through this quarantine station.

Justin: [exhales, shocked] That's wild.

Sydnee: Isn't that a wild number?

Justin: It is wild.

Sydnee: Wild number. Um, and it still stands, today.

Justin: Huh.

Sydnee: You can still go see the Philadelphia lazaretto.

Justin: Cool.

Sydnee: Yeah. It's still— It's still there, it's still, um... It's like a historical site. I believe it was restored recently, maybe even just last year—

Justin: Wow.

Sydnee: So that it can be visited again. Um, it closed—

Justin: Field trip.

Sydnee: It's been closed since, uh 1895, but it is— But it still stands there today.

Justin: That's a great building.

Sydnee: And it is the oldest standing quarantine facility, uh... Now I know, in the U.S.

Justin: Mmm.

Sydnee: So...

Justin: What a distinction.

Sydnee: Yeah! And you can still go see it today.

Justin: Uh, folks thank you so much for listening to our podcast. We appreciate you. We hope you've enjoyed yourself today. You've learned something, you've been edified. Um... I wanted to let you know, we got some shows coming up. If you want to see us perform live, you may do so.

April 1st, we're gonna be in Boston at the Orpheum Theatre. April 3rd, we're gonna be at the Grand Theatre at Fox Woods in Connecticut. Uh, we— Baltimore 22nd of April, we're gonna be uh, at the Hippodrome And Norfolk, Virginia April 24th at Chrysler Hall.

You can get tickets to all those shows at bit.ly/20funny and we hope you'll come see us. Some of those shows are selling out, so act fast... And come see us live. If you've got— If you're in those areas, you got show suggestions for local medical topics, send them our way.

Sydnee: Yeah, please do. Those always help so much. And thank you— I know some people have already started to send me those. Thank you so much for thinking of doing that, and being proactive. It really helps me out.

Justin: Uh, I believe uh— Oh, we need to say thanks to The Taxpayers, for the use of their song "Medicines" as the intro and outro of our program. Thanks to you, for listening. We'll be back with you again next week. And until then, 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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