

**JOHN  
ESSIGMANN:**

I'm always interested in listening to JoAnne's lectures, and she talks about how she got interested in biochemistry from a background in what I would call more physical organic chemistry by attending a lecture and being completely inspired. And I am a toxicologist by training. And how did that actually happen. I have a similarly inspiring story, so I thought I would tell that.

I went to a lecture about 45 years ago, by a fellow by the name of [Richard] Evans Schultes. He was the director of the Herbarium at Harvard-- and I'd been to it; it was very interesting-- and a professor there. And he is arguably the father of the field called ethnobotany.

I went to this talk-- there were only about 10 people at the talk. He-- because it was a small talk, he gave it sitting down, he asked permission to do that, he's a very polite man. And it was very informal, only a few slides. And the slides were mainly of him living with indigenous peoples, Native Americans in the Southwest, Amazonian native peoples, very interesting.

And he talked about, for example, he had just graduated, his undergraduate degree from Harvard. His parents were eager to have him go to medical school. He was very interested in botany and in native languages.

So he went to live with the-- I think it was the Kiowa people in the Midwest-- I think it was probably Oklahoma. And he learned about peyote and a lot of other chemicals that were hallucinogenic. And he realized, of course, that many of these kinds of compounds that were used in a lot of rituals, were also medicines at other concentrations, anesthetics and so on.

He then went down to South America, living with various tribes. He'd be gone for up to a year at a time. There are wonderful stories, well actually terrible stories, I guess, about him paddling his canoe for 40 days with malaria-- it was terrible-- to get to a hospital, things like that.

But anyway these are stories-- I was a young scientist at the time-- these were very influential to me. And he talked about, I was down in South America and they-- and I found the plants from which the native people got their dart and arrow poisons. And he said, out of that we isolated curare, and initiated the path toward the clinic of curare as a muscle relaxant.

He said that it didn't work so well. I remember this lecture like it was yesterday. He said that it

was the beginning of World War II, we were cut off from the rubber plantations in the Philippines and other places. And since South America had jungles, his form of, quote unquote "military service," involved trying to find sources in the jungle of latex that could be used to make rubber so that we could have an effective war machine.

So anyway, I went up to this fellow after he gave his talk. And I said, look, I just got to do this kind of stuff. This sounds really interesting. And he said, what's your background? I said, well, you know, I worked as a chemist. I was a biology major but I worked as a chemist at an industrial consulting company during my undergraduate years.

And he said, oh, you got to go talk with Gerry Wogan at MIT. He said that he isolates toxins from fungi that you find out in the jungles of Southeast Asia. And, so anyway, that's how my career began. As you know, I got to eventually meet Gerry Wogan and work with him. He had already identified this toxin, aflatoxin. But he needed somebody to figure out how it worked, and that's how I got my start.

So my interests have been in chemicals from the environment. It could be a pollutant. Or it could be a chemical that could be a precursor to a therapeutically useful molecule, and how do they interact with biological systems. And that's what toxicologists and pharmacologists do.