

Why God Put Those Bumps on Your Tongue

“How did the Indians figure out which plants were poisonous and which plants were edible?” I’ve heard the question posed a hundred times. The stock answer is, “Trial and error.” It’s sort of a silly question, and it’s a subtly racist answer.

How did you figure out that broccoli, apples, celery, and barley were edible? You probably didn’t. I bet somebody told you. I bet you never even thought about it. You just ate what your parents were eating. It probably didn’t take an uncautious fool or brave culinary hero in the household to determine this. So why think it would have been different for Native Americans?

Your *culture* knows that these things are edible. Indians had culture, too. Lots of people seem to believe that every tribe must have had to periodically designate a plant-tasting guinea pig, replacing him or her upon death. Or they believe that, at least “in the beginning” (whenever that was) they had to do this. There is the notion that, at some point in prehistory, deaths caused by eating the wrong plants must have been relatively frequent.

That’s absurd. Native Americans were no more likely to die from consuming the wrong plant than were Europeans.

I’ve never heard this question posed about anyone’s *European* ancestors. How on earth did *they* ever figure out what to eat? Who told *them* that pears and rutabagas were safe? Why isn’t this amazing? Why don’t we assume that *they* must have died with lamentable regularity until recently, when modern people figured out everything worth knowing and wrote it down? The truth is that there was never a time, anywhere, when deaths caused by eating the “wrong” plant were a regular occurrence in human culture.

The whole scenario reminds me of Erich von Daniken’s ludicrous book, *Chariots of the Gods*, in which he claims that aliens came to Earth and taught or inspired ancient peoples to perform various amazing feats, such as constructing the pyramids of Egypt and Mexico. Millions of people believe these claims, though they are based on nothing other than von Daniken’s ethnocentric assumption that all non-white people were too incompetent to have accomplished anything interesting by themselves. (At least it’s comforting to know that if we ever need to carve and erect ugly stone faces on an isolated Pacific island, or if we ever need to design giant spider monkey drawings in a rocky desert, sophisticated aliens will be there to help us.)

The truth is that knowledge of how to use plants has been handed from one generation to the next for so long that it is impossible to say that the process started at any one point in time – or that it has ever ended. Discoveries were made so slowly and infrequently that no society ever had a period where determining which plants were poisonous or edible was a part of everyday life.

For modern civilized people, utterly removed from and naïve about Nature, to ask this question is much like an American who, in his frustration while trying to learn Japanese, asks, “How did the Japanese ever learn this?”

The people who migrated long ago into the Americas from Asia were not thrown from China to Mexico in one storm. The process was rather slow on a human scale. There is very little difference in the vegetation between the near coasts of Alaska and Russia, scarcely more than exists between the coasts of Wisconsin and Michigan across the big lake. Yet people were occasionally presented with plants that were totally unfamiliar to them. They somehow managed to figure out which were wholesome and which were not – and they probably did it rather quickly. How?

First, I’ll tell you how they didn’t figure it out. *They did not figure out what to eat by watching animals.* Squirrels eat mushrooms that will kill a person. Deer love yew needles, but a tea from them would put you in the hospital. Bears eat rotten meat that would send you puking your guts out, and raw skunk cabbage that would burn your throat like you’d just downed a cactus. What does “watching the animals” mean? Which animals? Which foods? People did not learn what to eat by watching deer any more than deer learned what to eat by watching chipmunks.

That off my chest, I’ll tell you how it really happened. People figured out which plants were safe using the most sophisticated, accurate, and amazing piece of food safety-testing equipment ever invented, *the tongue!* That’s right. Pretty simple, eh. The good old tongue and its taste buds, telling you to eat what’s yummy and spit out what’s yucky.

The people of whom we speak were not novices when it came to field botany. Poisonous plants are often related to other poisonous plants, or have ecological clues suggesting that they are toxic. If people did try a plant, and it tasted wrong, they’d spit it out. If the taste was neutral, they’d probably still spit it

out and feel for effects. If it tasted good (in a botanically educated sort of way) they might consume a small portion of it and see how they reacted. They might even vomit in an extreme case, but the chances of anything life-threatening happening were very slim for an *educated* forager.

I am certainly NOT suggesting that you go around taste-testing unfamiliar plants; I'm just telling you how ancient people without books and libraries determined if new plants were wholesome, in those exceedingly uncommon cases where nobody around was familiar with the plant. I'm telling you that – although you'd be more than stupid to try – if you did, you'd find that in almost every case, poisonous plants would taste horrible and edible plants would taste at least passably good. That's the whole reason that you were endowed with taste buds. For example, I have tasted almost every toxic or inedible berry that grows wild in Wisconsin: Tartarian honeysuckle, mountain holly, bittersweet, red elder, bittersweet nightshade, Virginia creeper, winterberry, arrowwood, gray dogwood, Canada moonseed, and common buckthorn, to name a few. They range in flavor from horrible to even worse.

I've read warning after warning about the risk of confusing common buckthorn berries with various edible species. Well, here's an activity for you: find a buckthorn berry, chew it up to taste it, and then imagine swallowing it. I bet that for five bucks you couldn't do it; that's how repulsive they are. (Don't do it, really, I was kidding about the five bucks. But you get the point.)

People were made to eat plants, and we have a built-in safety device to avoid making mistakes when doing so. However, this safety device isn't foolproof, which is why you should never rely on it. Doing so could get you killed, for several reasons.

The first is that modern, civilized folks are horribly out of touch with our sense of taste. Some of us actually believe that garbage they taught us in gradeschool about there being only four basic flavors (sweet, sour, bitter, and salty) of which all flavors are composed. (Actually, there's something like thirty basic flavors.) If that's not bad enough, many people don't even readily recognize those "basic four" because, for example, they think that *bitter* or *sour* mean "bad" and that something sweet cannot also be bitter or sour. I think the problem stems from the fact that, over the course of a year, the average American consumes only a fraction of the number of plant species that a hunter-gatherer would, and rarely cooks with these plants from scratch. Plants also vary greatly *within* species. While modern people eat only a few cloned or carefully-bred varieties of each plant, foragers are exposed to the drastic range of flavor that each species offers. The few plants that civilized folks do eat have their flavors masked by salt, vinegar, sugar, and the same few spices. We are not accustomed to tasting foods and assessing their flavors, and deciding what these flavors mean; this was an everyday aspect of the life of a wild plant gatherer. And few of us have the extensive experience with field botany that all people once possessed.

Once during a field trip I was discussing the natural history of a plant that I had pointed out. A participant, assuming that the plant was edible, began to eat the leaves, and I didn't notice until she exclaimed, "These are good!" The plant that she was eating is mildly poisonous when raw. The leaves taste so incredibly bitter and acrid that I can't even imagine eating them, much less pronouncing them "good." Yet there she was, chomping away. (She suffered no ill effects, thankfully.) Over the course of the day, I noticed that this same woman was gloriously fond of *every single item she tasted*. Then I realized what was going on: she was so excited about wild food that she could not taste rationally. That's the third danger: our prejudices, expectations, and hopes can have an enormous influence on the way that we taste things. Bad news for a forager.

Those who gather and prepare plants often *force* themselves to like what they've made, simply because of all the effort that they've invested in doing so. This is a serious no-no. Remember this as a rule of safety: if it doesn't taste good, *don't eat it!* And be honest with yourself. This is very important because, should you make a mistake when gathering (which there is no excuse for, but occasionally it happens) it provides a second safety check.

There is another very good reason to NEVER taste test unfamiliar plants. A few plants are so deadly that only a taste could kill you or make you seriously ill. I know of two: water hemlock and coral bean. There are a few others. Since time immemorial, and still today, an occasional fool sacrifices his or her life to remind us that even a tiny bit of these plants can kill, just as an occasional fool reminds us not to climb radio towers in the dark after having too many beers.

To those with no other options, however, tasting new plants was not as perilous as you might think. There are very few plants that are dangerously toxic in small doses, and these tend to be concentrated in a few families, which our ancestors, expert field botanists, probably knew.

Some people claim that certain toxic plants smell or taste good. In particular, water hemlock and poison hemlock smell (and supposedly taste) somewhat like carrots or parsnips. To me, the smell is “chemical” and revolting. But it is definitely carrot-like, and there is some potential for confusion.

Despite all of these warning, the sense of taste is an amazing ally, and I encourage you to use it appropriately. For example, many people’s *eyes* have trouble telling apart the twigs of pin cherry, black cherry, and choke cherry, but my *tongue* can do it all by itself.

Rest assured that those ancient, illiterate, ingenious ancestors of ours knew how to test plants by taste on those rare occasions when perhaps it was necessary, and that they very, very rarely made a mistake. They knew the perils. They knew which plant families were most likely to be dangerous, and which ones weren’t. They weren’t playing Russian roulette, just chowing down and waiting to see if they’d die.

But then again, sometimes, very rarely, somebody did die. They died so that we wouldn’t have to. So remember that tongue with its special bumps; enjoy it, use it – but stick to the books for the ID.