

# Black Stoneflower: A unique Indian spice

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In 1997, Priya Mani fished something strange out of the cauliflower soup she was served at a wedding banquet in India. She didn't know what it was, she knew only that she was not willing to eat it. Twenty-five years later, her article in *Art of Eating* shared her discoveries about a spice essentially unknown even in India.

The title of the article is *Tasting a Tasteless Taste*.

**Priya:** The very first time I tasted it, now, it seems to me, must have been 1997. So it was a wedding in Chettinad. Chettinad is a very beautiful part of an area in Tamil Nadu in South India. And it was for one such wedding of a family friend, who are from the Chettiar community. And you would expect a classic Tamil or a Tamil *sappada*, which is a meal laid out on a banana leaf, and you'll be sitting on a long table and food is served in sequence. But surprisingly, what arrived first was a bowl. And, that very thing surprised me, because you don't often see utensils being used that way in a traditional meal. And then a melamine bowl showed up and in this melamine bowl was a very, very thin yellow soup. And I took a spoon of the soup and it was very different tasting. I have not tasted anything like that before. So I take a couple of spoons and then it's really delicious. It's ... I can find cauliflower florets in it. I can see some fennel seeds. And I remember the broth was really thin.

And then I found something, you know? I could feel something in my mouth. And then I sort of slowly take that out from my mouth. It's a bit embarrassing to put your fingers in your mouth. It's not etiquette at all. I'm pretty sure that's global, right? So even though you would eat with your hands in India, it's not okay to put your hand into your mouth and pull something out. And I pull out something that looks very black, grey, papery, kind of weird. And I was just looking at it when the guy next to me said, oh, "*kalpasi aa?*", in Tamil. And he was like, it's that moss. And I was like, oh, is that moss? no. *Pasi* is a word that is a Tamil word you would use to describe anything that was

growing on walls, slimy stuff. For example, even seaweed is called *kadarpasi*, or the stuff that comes out of the sea. So just the connotation of that was not very appetising. So I very quietly left that little piece in the corner of my leaf, and I find my way out of that place. I don't continue with my meal. That was my very first experience.

**Jeremy:** Back then, Priya had no idea what it was that she'd fished out of her mouth. Fast forward 20 years ...

**Priya:** I was out with my mother who was trying to buy wholesale spices. She was trying to buy, cumin and mustard and turmeric. Some for herself and some to pack for me to bring back to Denmark. So we were out in the market, and the shopkeeper had a lot of these other spices with him. So I just picked up a lot of things that looked curious and that I had not, uh, tasted before, because I've been working on a visual encyclopaedia of Indian food for a long time now. And so new ingredients or things that I haven't encountered before are obviously of extreme interest. So I said, okay, let's just ... It's one of those things, you just see a lot of new things and you pick up, you pick them up in a rush. And the shopkeeper said, you add it to biryani. So it sounded interesting. And I put it into my bag and I brought it.

A couple of months after that ... So, my day job is, I work as a designer together with my husband, where we work and we design environment emission sensors, and that means we design sensors and sensor systems for monitoring outdoor air pollution and indoor air pollution. And basically we work with the environment emissions. And I was involved in developing education material for schools regarding air quality, and some of the material that I received to develop this study material, one of the items was this packet of lichens, because lichens are bio-indicators of air quality.

**Jeremy:** These lichens, which are stunted and gritty in polluted environments rather than lush and leafy, led to Priya's light-bulb moment.

**Priya:** The lichens that were in small Ziplocs, they had labels on them, and one of them said Parmotrema and when I looked at that, it sort of reminded me of this spice that I had picked up or this packet I had picked up in India a couple of months before. So I came back home and that night ... So there I had a lichen in my kitchen, and I was

going to be flavouring biryani. All of that sounded a little funny. I wasn't sure if I was on the right track. So, I love calling up people, you know? So one of the first things I did next morning was to ring up this number on the packet which had ... The wholesale trader's number was on the packet and it was a number based in Delhi. So I rang them up.

And it's not often easy to find information when you call them because they also don't know who you are and why you're being curious about something that is, you know, not something everybody would be curious about. You could be an authority. You could be from the agencies that monitor these things. So they don't want to often tell you many things. So he was like, oh yeah, yeah, yeah. You know, that comes from the Himalayas. And it's really rare. And um, it's a lot of labour to collect them. And he wouldn't tell me more. And I said, but who do you sell it to? Who? How do you cook this? And then he just said you would put it in a masala. And I said, what kind of masala? He said, well, you know, a lot of masala manufacturers come and buy it from me. So ...

**Jeremy:** You say this wholesaler told you that it came from the Himalayas and that it's a lot of labour to produce. So, I mean, I don't quite get it. How how are they ... How is it being produced?

**Priya:** What I learned after that, by then contacting other traders and sort of piecing this puzzle together, is that these lichens are scraped off the trees, particularly broad leafed oak trees, in the lower Himalayan region. And it's a lot of seasonal work. So seasonal workers arrive there. They are migrant labour often or tribals, local tribals, who are involved in this. And they scrape it off. They have a small, knife-like tool and they would scrape these lichens off, slowly off the bark, and they would collect them. And then they are brought to a huge collection centre in the valley. And they are then sorted based on morphology. So, uh, the Usnea or the Ramalina would look different from the Parmotrema. So they would they would do a visual inspection and separate the lichens.

**Jeremy:** And how do the local people use it?

**Priya:** It's interesting because those who forage it don't use it. So they don't have any culinary use for it, apart from the fact that it does have a lot of medicinal uses. So that's the other ancient knowledge that we've had of stone flower, as it's called. Did I tell you? That was

another misleading path, because a lot of different names for this lichen actually mean flowers that bloom on stone. It's called *sheileya* in Sanskrit or *shilapushpa*, and it's called *kalpasi*, *kal* also means stone. So a lot of these different names in Indian languages all refer to stones. So one would imagine it is harvested from stone, but apparently not. It's harvested from trees. So yeah, it's not ... These local communities don't use it. For them, it's pure economic value. They sell it to traders who then have various end customers.

**Jeremy:** And as far as culinary use, although you had to go looking for it, it does seem to have been hiding in plain sight. I mean, you said you found it in packages of prepared garam masala.

**Priya:** Exactly. And you will notice that these are not often said with the same name, right? So it's not like, you know, when you say cardamom. A cardamom is a cardamom. You wouldn't call it anything else. But here there are just so many different English names and local vernacular names. So it really depended on where you picked up a packet of garam masala. If you picked up a packet of garam masala in Hyderabad region or, you know, in the Deccan plateau in that area, you would ... it would be called *pathar phool*, or same with Lucknow, it would be called *pathar phool*, which means the stone flowers, literally. Or then if you picked it up in Bombay and that part of Maharashtra or in the western side, it would be called *dagga phool*. If you picked it up in Tamil Nadu ... The same manufacturers sometimes label their products differently for, you know, for retail in different parts of India. And then they changed the name, they would call it *kalpasi*. And in many cases I realised they were not even declared.

Now this becomes obvious when you look at say, for example, very regional cuisines where the stoneflower is an essential ingredient. So there are two very prominent regional kitchens in India where it's used. One of them is in Chettinad, of course, where a lot of the Chettinad food uses a base flavour of stoneflower. It's thrown into hot oil. So that's their way off of extracting flavour. And in Maharashtra, they braise it, they dry roast it and grind it into a masala. The way they extract flavour from it is very different.

**Jeremy:** There seems to be this contradiction that the lichen itself doesn't seem to taste of anything, and yet it seems to be an important ingredient in spice mixes and in recipes. So how do you how do you understand that?

**Priya:** No one can really tell you what it tastes like. When you put it into your mouth, it is like eating paper. It doesn't taste of anything. So I called up a lot of different chefs who work in restaurants, and people had time to Zoom and chat and I spoke to many of them, trying to understand how they use stoneflower in their cooking. And they were not able to tell me a precise flavour contribution that say, cinnamon would have, or saffron would have. This sort of eluded words. People couldn't put them in ... They couldn't describe it. So it was a hopeless conversation to have. But they said one thing. They said, if that needs to be in a recipe, say, a *nihari*, which is a bone broth, or a *goda masala*, and you don't add it, it doesn't taste like what it needs to taste. So this is very important for flavour. But we just don't know what that flavour is. But it's a very key ingredient and you know it when it's missing. So that was the clue I got. You know it when it's missing.

I said, well, I think I just need to put my kitchen lab niftiness to use. And I said, what if I did not consider this as a spice for an instant? And I said, this is an ingredient, let me try and do what you would do with other ingredients. And I think those experiments, those very simple experiments, helped me understand what the landscape of flavours that this lichen can create could be. Let me give you an example.

I said, okay, let me first soak it, that's the first thing you can do. You can soak it in water. And I let it soak in distilled water overnight. Next day morning, the lichen had turned pink. It's a very faint pink. And, uh, when you smelled it, it had this very beautiful woody note, pine woody note. You could feel like you were in a forest. But it also had this very faint, masala-like flavour. I cannot ... You have to experience it.

And then I took this soaked lichen. It had become soft and very pliable because, as I told you, it's very dry before. And I tasted it and it was sweet. It was intensely sweet, and the sweetness is very intense. I don't know if you have tasted stevia leaves, you can relate it to that kind of sweetness. It's intense sweetness. But that's followed by this sharp bitterness because it's just so sweet. It's like when you eat ... If you eat a small piece of artificial sweetener, it has the sweetness, but it also has a very pronounced bitter overtone to it. It had that kind of taste.

And then I decided to steam it. Yeah, when you steam it, the house fills with the smell of this fine spicy masala flavour. I'm saying this again because masala just seems to come to your mind. Because when you smell a masala blend, you can never place one ingredient in it. It's always this medley of things. So you can't say there's one prominent spice in it. It's all mingled, and they messed around with each other's flavour molecules, and it's a bit like that here. Then I decided to fry it. I said, what if we put some heat on it and fried it? So I took that steamed piece and I fried it. Now, when it turns incredibly crisp, you can ... It almost crumbles in your finger when you've fried it. And it fries instantly. And then when I tasted it, it tasted of nothing.

**Jeremy:** Huh?

**Priya:** And I said, okay, that sweetness was gone. Also, the sweetness was gone when I steamed it. So water was still there. It was saturated with water like it was before, but steaming somehow removed the sweetness. And then I had this fried piece and I put a small piece of Maldon salt on it because you often need a carrier of taste of some sort. You need a sugar or you need a salt to carry the taste. And when I ate that second piece, gosh, that was incredible. That was delicious. It tasted like I had, you know, shaved portobello or shiitake into very thin slivers and I have frying it and eating it. It was just had this really nice mushroomy flavour to it. It was really delicious.

You can see that from my kitchen experiments, there is a direct connect to how these communities use the spice. So in Chettinad the spice is thrown into hot oil, so they fry it literally, right? Just like you would do a classic Indian *tadka* where the fat soluble flavours are drawn from it. But then if you went to Maharashtra, as I said, you would, they would, roast, dry roast it. And that makes the masalas of the region very, very dark because this gives it ... It contributes to the darkness. Apart from, of course, the region also braise all their spices a little more than one would. They don't just toast it. They continue to toast it on slow fire for a long time. So that eventually gives all their spice blends a dark tone. But interestingly, if you look at Lucknow and Hyderabad region, they add it to a sachet. They added to a small what they call a *potli*. And in this white cloth, a lot of different spices, and they let that steep in a broth, they let that cook. So it's again the water soluble flavonoids that are being extracted there. So I think the flavour is so different in these two ... in these very different ways of

using the spice. And that, I felt, eventually connected the dots to my kitchen experiments, for me at least.

**Jeremy:** Lichens are pretty slow growing. And nobody's actually farming them, as far as I know. So how sustainable is the harvest?

**Priya:** Exactly. So that's the big concern. And when I was talking to Dr Upreti, he said that, I think it was 2010 that he mentioned, that he was in Jim Corbett National Park, which is a very huge and important national park in Uttarakhand region of North India. And he was there by the fringe of the forest, and he could see that truckloads of lichens were being shipped, were being taken out. So he was like, that's a lot of lichens to be harvested and sent off in one go. It's not sustainable. You know, the whole regenerative harvesting is lost because people who are now arriving to participate in the labour force, they are migrant labour. The need and the demand for it is so high. So there is no tacit knowledge of how these things have to be harvested.

Lichens grow at about 2 to 3mm a year, and Parmotrema is a slightly faster growing lichen. But still, it would take about 10 to 15 years before these can recolonise an area that can be commercially meaningful to exploit, if I make sense. So, yeah, the rate at which it's being cut down is definitely a cause of concern. And that was sort of the motivation to push this as a paper because if the lichen is now being used across the industry in general, masalas, which means masala manufacturers have ... It has dawned upon them that this is an incredible flavour source, and the chances of people buying their masalas in a highly competitive market is higher if they use ingredients like these that bring a lot of umami to food. They are going to go after it. They don't care how it's being harvested, how it's being brought down. So I think one of my main missions was to create an awareness that this is the unspoken, unseen ingredient in those spice blends. So please be aware of what you're trying to eat because it may be causing irreplaceable loss in these in these ecosystems.

**Jeremy:** Well, I mean, ultimately, if they over-harvest, then they won't have it anymore. But, it's interesting you're based in Copenhagen. And to be honest, if if you'd asked me before I read your article whether there were any cuisines that used lichens, I would have guessed something Scandinavian. So I wonder, have you talked to anyone like Rene Redzepi at Noma or Magnus Nilsson?

**Priya:** Yes, actually. Some of the experiments I did, the starting point was when I read Magnus Nilsson's recipes with reindeer moss. And then I went on to investigate who eats reindeer moss. Is that a traditional diet? And I came to understand that lichens have always been sort of food security for this part of the world. One of the most common ways that it's consumed, because lichens have lichen polysaccharides, and these are not digestible by humans. ... So if humans have to eat them for nutrition, which is not how stoneflower is used in India, but if they have to eat it for nutritional value, then they have to eat it in a form where it becomes ... the body can receive, can absorb it. And a way that I read was that humans eat it after a caribou or a reindeer has eaten these lichens, they harvest it from the rumen of these animals and then consume it.

**Jeremy:** Final question, since you've since you've done all this research, are you now using lichens more in your own cooking?

**Priya:** No, no, I have a box of it. I use it very sparingly because you just need so little. You need just one frill. If you're infusing it in oil, that's more than enough. Little is more here. Less is more here. And I've tried making my own *goda masala* and *garam masala*, but you'd be surprised how many people have written to me since, saying they have tried using it in their *garam masala* mix, and they have absolutely loved it. So, I think that's an interesting feedback.

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