

# Edible Wild Plants in Japanese Culture and Cuisine: A Look at the Japanese Horse Chestnut

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**Abstract:** *Edible wild plants occupy an important place in Japanese culture and cuisine. They symbolize the seasons, motivate conservation of nature, and in the past provided an escape from starvation. Focusing on wild plants offers a different perspective on Japanese relationships with the land than does agriculture. The nuts of the wild Japanese horse chestnut tree (*Aesculus turbinata*, *tochi-no-ki*) were especially vital to mountain-dwelling Japanese from the Jomon period (14,000-300 BCE) through the mid-twentieth century, both as a famine food and a celebratory one. This article, excerpted and adapted from the book *Eating Wild Japan: Tracking the Culture of Foraged Foods, with a Guide to Plants and Recipes*, describes the changing uses and meanings of this traditional food.*

**Key Words:** *wild plants, horse chestnut, famine, farmer-forager, Japan, Jomon*

Edible wild plants and seaweeds have played an important practical and symbolic role in Japanese diets throughout history. The Jomon people who inhabited the archipelago for approximately ten millennia hunted, fished, and gathered an extraordinarily diverse assortment of species, including eagles, horse chestnuts, sharks, flying squirrels, lily bulbs, and many other foods that might raise eyebrows today.<sup>1</sup>

Shell mounds and other archaeological evidence suggest that in the Jomon era, frequently dated approximately 14,000 - 300 BCE, over 350 kinds of shellfish, 70 kinds of fish, 60 different mammals, 35 birds, 30 nuts and seeds, several hundred wild plants were eaten, according to food historian Nagayama Hisao. Although the subsequent spread of agriculture shifted the emphasis away from these foods, it did not fully displace hunting and gathering lifestyles; particularly in mountain hamlets and cold, northern realms less suited to cultivation, people continued to rely heavily on wild edible plants for many centuries, until economic development and advances in agriculture rendered them less necessary.<sup>2</sup> Zareen Bharucha and Jules Pretty point out that the same is true throughout the world, and that “many rural people and their cultures might be better known as variants of cultivator-hunters or farmer-foragers rather than just farmers or hunter-gatherers.”

In Japan, the context of agriculture often turned edible wild plants into symbols of poverty, the underbelly of the often unattainable aspiration to eat rice at every meal. Rice cultivation spread through Japan during the Yayoi period (approx. 300 BCE to 300 AD) and by the eighth century had taken on important religious and political meanings, yet even into the twentieth century, pockets of the population were not able to eat it routinely.<sup>3</sup> Land-poor farmers and those in rugged areas often ate *tochi* (horse-chestnut) cakes, *warabi* starch gruel, and other wild foods to survive, in addition to hardier cultivated grains like millet. In the Edo period, guides were published detailing the proper use

of wild plants to stave off hunger (*Katemono*, the most famous of these, was published in the Yonezawa Domain in 1802 following the devastating Tenmei famine). Even into the early twentieth century, the association between wild foods, shame, and deprivation remained strong, as Henmi Kinzaburo writes in his 1967 plant guide.<sup>4</sup>

But this is not the only way edible wild plants and seaweeds have been viewed. The foods that nature provides unassisted have always served as both insurance against agricultural failure and as pleasurable, health-giving links to the land, the seasons, and pre-agricultural ways of life. A thousand years ago or more, urban aristocrats made an elegant pastime of collecting spring greens on excursions to the country and feasted on seaweed sent as tribute from coastal villages. Vegetarian Buddhist monks built a whole cuisine around wildcrafted seaweed, and Shinto priests offered up wild foods from both land and sea to their gods. Today they are beloved by urban and rural Japanese, as likely to appear on an elegant *kaiseki* tray as in a homestyle meal celebrating spring's arrival. Even more than cultivated crops, *sansai*—the Japanese term for wild mountain vegetables—embody the evanescence of the seasons and the purity of nature, and for this reason feature frequently in the *Manyōshū* and other old collections of verse. In a more practical sense, they foster a relationship to the land that is quite different from that engendered by agriculture—one that demands careful observation, conservation, and the nurturing of diversity.

The following excerpt from Chapter 2 of *Eating Wild Japan* describes the uses and meanings of the Japanese horse chestnut, a plant of vital importance to many generations of mountain-dwelling Japanese. In the remainder of the chapter (not published here), I discuss the sale of large old *tochi* trees in the mountains of Takashima, Shiga Prefecture to timber dealers in the early 2000s, and the citizen-led

movement to reverse the sales and protect the trees for posterity through an arrangement similar to a tree-specific version of a land trust. Finally, I describe in detail the methods used in this community to process horse chestnuts for use in *tochi-mochi*, a traditional food that has been revived as a tourist product.

## From Ch. 2. Tree of Life: The Rise and Fall of the Japanese Horse Chestnut

It seems a sad tendency of the American mindset to blithely overlook the role of certain ordinary objects in shaping our collective path. We fill our history books with evil kings and heroic generals, forgetting that the plough and the mosquito explain much more. So it was for me and horse chestnuts. In all the years I lived in Japan, I never recall paying any attention to *tochi-no-ki* (Japanese horse chestnut trees, *Aesculus turbinata*) or their pungent yellow nuts (*tochi-no-mi*), although their role in the country's history is monumental. As a child, I remember gathering similar nuts with my mother at a park near our house in San Francisco, having mistaken them for the sweet, mild nuts of the chestnut tree. How disappointed we were, after carefully poking each one with a knife and roasting them in the oven, to find them so revoltingly bitter we couldn't swallow a single bite. They must have been either buckeyes or European horse chestnuts, both of which are close relatives of Japanese horse chestnuts. All three belong to an entirely different botanical order from true chestnuts, and without proper processing are toxic enough to cause vomiting, diarrhea, twitching, paralysis, and very occasionally, death. Fortunately, their awful taste usually prevents anyone from getting that far.

In Japan, too, I am sure I must have eaten *tochi-no-mi* more than once (properly processed ones, of course). My former husband and I spent many an afternoon driving through the mountains in search of large old trees we'd

heard or read about. This odd hobby took us to exactly the sorts of remote villages where people still made *tochi mochi*, an ancient variation on pounded rice cakes that incorporates the nuts after they have been thoroughly leached to remove toxins. We even lived for several years near the city of Owase, one of the places known for its *tochi mochi*. But I never gave the speckled tan mounds any thought. After all, shops were full of *yomogi* (mugwort) mochi, strawberry-and-cream mochi, matcha mochi, classic bean-paste mochi, and countless other spinoffs. *Tochi mochi* hardly stood out.



### Tochi Mochi

As I began the research for this book, however, I realized that the horse chestnut is among the *ur*-foods of Japan. Like acorns and true chestnuts, the calorie-rich nuts of the *tochi* tree were a key source of energy during the height of the Jomon period, that long expanse of time, far longer than the agricultural age, when hunters and gatherers inhabited the archipelago. Even after those inhabitants learned to farm, *tochi-no-mi* remained an essential safety net against famine. For thousands, perhaps even millions of people, they were the sole barrier between life and death. In some regions this continued into the

1960s. The great twentieth-century folklorist Miyamoto Tsuneichi, who walked the length and breadth of Japan recording the stories of its rural people, talked about being served freshly pounded *tochi mochi* in the mountain villages of Gifu Prefecture in the Chubu region of Honshu. In one of these villages, he was told that it was thanks to the horse chestnut that the local people had never experienced starvation. Whenever a woman married, the villagers said, she was given a horse chestnut tree by her family—or more accurately, she was given the right to collect the nuts from a tree in her village. Each fall she would walk to the tree, gather the nuts, and bring them back to her new home, storing them in the attic to be preserved by the smoke drifting up from the hearth. Sometimes even now, when an old farmhouse is torn down, the attic will spill forth a cache of dusty horse chestnuts. In lean years, the woman and her husband and children would supplement their staple diet of grains with the nuts. When Miyamoto asked how common this practice was, he was told that people across quite a wide area shared the tradition, and that “this was a great source of strength in surviving the harsh mountain life.” Interestingly, *tochi mochi* was also a celebratory food eaten at festivals. Although by the time he recounted this tale in 1980 it had become a novelty produced mostly for tourists, he noted that “the horse chestnut was once an important food that allowed us to survive.”<sup>5</sup>

Miyamoto was not the only scholar to describe the horse chestnut in such dramatic terms. Wada Ryozo, the author of a book on the tree published in 2007, wrote: “To study the culture surrounding the consumption of horse chestnuts is to investigate the foundational culture of Japan, the culture of its mountain villages, and the ways that relationships between the natural environment and human activities have developed through history.”<sup>6</sup> When I later spoke by telephone to his coauthor, the forestry scientist Taniguchi Shingo, he described the horse chestnut as a

kind of miracle tree. The larger specimens will reach thirty meters tall and over two meters in diameter, with branching trunks and huge, three-to-nine-fingered leaves. In a bountiful year these trees will bear two or three thousand nuts, which can easily be stored for a decade thanks in part to their bitterness, which keeps most pests away, and provide more calories by weight than white rice (369 to rice's 352 per 100 grams). The riparian trees hold riverbanks in place with their sprawling roots, send up fragrant towers of creamy white flowers that feed bees and other pollinators, house bears and birds in their cavernous hollows, and provide medicine from their bark, dye from their nuts, and all manner of furniture, tools, utensils, and musical instruments when and if they are ever cut down (the wood is especially well suited to forming the backs of violins).

But Taniguchi's interest in the tree was by no means purely practical. "Your call reminded me that I haven't eaten *tochi mochi* yet this year," he noted longingly; he was currently living on the southern island of Okinawa, one of the few areas of Japan where the trees do not grow. When I asked if he wanted to say anything else before finishing the interview, he thought for a moment, then replied, "The bitterness of *tochi* lingers in your memory. Our ancestors survived by eating the nuts of these trees, and so we are here today. I believe a fondness for their flavor is in our genes, imprinted from the Jomon period when eating them was a means of survival."

By this time, I was very curious to try the nuts myself, as well as to learn what magic cooking techniques were used to transform them from nuggets of potent poison into a life-giving substitute for rice. Through acquaintances I learned of a town called Kutsuki in Shiga Prefecture, about an hour and a half north of Kyoto, where *tochi mochi* was still produced and a movement was underway to protect some of the local trees. It happened that the main

group behind this movement, called the Association to Protect Large Trees and Water Sources (巨木と水源の郷をまもる会), was holding a lecture during the time I planned to be in the general area and that several geographers studying the trees would be attending. They invited me to join them, and I jumped at the chance. I also arranged to visit several villages the following day so that I might see some of the trees and observe how *tochi mochi* was made.

This was how I ended up in a rental car with the geographers Fujioka Yuichiro and Teshirogi Koki on a beautiful Sunday morning in late March, heading north from the wide basin of urban Kyoto toward the mountains.<sup>7</sup> Fujioka was a lecturer at Kyushu University and Teshirogi at Setsunan University; both were youngish, neatly dressed, and extremely polite, handing over their business cards the moment we met and eagerly offering to help me with my luggage. As Fujioka threaded through a snarled Kyoto traffic jam, we talked about their joint research in Kutsuki; their latest project involved mapping groves of large *tochi-no-ki* and trying to figure out why they had remained standing in those particular places. They were equally interested in other edible wild plants. Fujioka in particular had an omnivorous interest in foraging culture and questioned me avidly about my recent research into *warabi* (bracken) roots and *oubayuri* (Japanese cardocrinum) bulbs. For my part, I was eager to confirm some of the peculiar stories I had been reading about horse chestnuts.

"Do people in Kutsuki pray to horse chestnut trees?" I asked.

"Yes, there is a large old tree that people pray to because they believe it is inhabited by the god of the mountains," Fujioka replied. "Of course, when you think about how magnificent they are, it's not so strange that they would be associated with deities."

"And what about *narikizeme*, is that practiced



too?" I asked.

A week or two earlier I had come across an odd passage in Nomoto Kan'ichi's book *Tochi to mochi* (Horse Chestnuts and Rice Cakes)—so odd, in fact, that I doubted my reading of the Japanese. In it, Nomoto recounted a story told to him by a man from Shizuoka born in 1922. Each year on the morning of the fifteenth of January (Little New Year, when farmers traditionally pray for a bountiful harvest), the man, then a child, would walk two kilometers with his mother and father to a large horse chestnut tree. His father would strike the tree with a cleaver while reciting the lines, "Will you bear, or will you not? If you don't, I'll cut you down!" In response, his mother, playing the role of the persecuted tree, would chant, "I'll bear, I'll bear!" while rubbing its wounded trunk with rice-and-adzuki-bean porridge. This "curse-like rite," Nomoto wrote, was a type of *narikizeme*.<sup>8</sup> The term is made up of the characters for *naru*, meaning to bear fruit or nuts, *ki*, meaning tree, and *semeru*, meaning to urge, press, or torment someone into doing something.

Fujioka said he had not heard of Kutsuki's residents doing anything similar.

"But this prayer, have I misread it? Do people really try to threaten trees into giving a bountiful harvest?" I asked.

"Oh yes," said Teshirogi. "*Narikizeme* is quite common. It's usually done to persimmons or Japanese plum trees, and at the end of the prayer, people sometimes cut off branches or scar the trunk."

Now I was even more surprised. Some prayer, I thought, as the geographer cheerfully shredded my romantic notions of nature-worshiping mountain people. But his next words reversed my line of thinking once again.

"Actually, there's a scientific basis for it. Applying stress can induce a plant to bear

more," he said. Modern orchardists sometimes "girdle" a tree by cutting off a shallow ring of bark around the trunk or branches. This temporarily damages the tree's circulatory system so that carbohydrates produced by the leaves become concentrated in the branches rather than flowing to the roots. The result is fruits that become larger or more abundant. Ancient Japanese were apparently not the only ones to intuit this effect long before science proved it; over a century ago, Scottish anthropologist James George Frazer described ceremonies nearly identical to *narikizeme* in Malaysia, Croatia, and Bulgaria.<sup>9</sup>

By this time, we were well into the mountains, speeding through a narrow river valley as we approached Kutsuki. We had taken a road called the Saba Kaido, or "mackerel highway," so named because it was historically used to transport fish south from the Japan Sea coast to the Kyoto metropolis. Before long the valley widened, and we emerged into central Kutsuki. The town is part of Takashima, a much larger municipality on the northwestern coast of Lake Biwa, Japan's great freshwater lake. Kutsuki is made up mostly of densely forested mountains dotted with hamlets. The "downtown" where the lecture was to be held consisted of a few residential neighborhoods on either side of the Adogawa river and a handful of shops. No trace remained of the deep winter snow that had melted just a week earlier. Plum trees were blooming, streams were sparkling aqua with snow melt, and roadsides were lush with new sprouts of *yomogi* (mugwort), *fuki* (butterbur), *kanzo* (daylily), and *hakobe* (chickweed).

We had some time before the afternoon lecture, so we met up for lunch with Iida Yoshihiko, another geographer involved in researching the *tochi* trees. Together we walked to the event venue, an old department store turned community center. "How about some *tochi mochi*?" Fujioka asked as he led us to a table in the cozy post-and-beam café occupying the building's first floor. I excitedly agreed, and he

ordered four bowls of *tochi zenzai* from the ancient, amiable waitress leaning on the kitchen counter.

It arrived in a lacquer bowl, a golden-brown, golf-ball-sized lump dissolving softly into a bath of warm, sweet adzuki-bean soup. I took a bite. The texture was dense and sticky, like regular mochi, but slightly nubbier. The flavor was oddly familiar. What could it be? I took another nibble. It tasted like . . . a pancake made with too much baking soda? I mentioned this to my companions. They told me I was probably tasting the ash used to leach toxins from *tochi-no-mi* and render them edible; baking soda and ash are both alkalis and share a similar unpleasant taste. I took a third bite. Below the baking-soda flavor was a distinct, unfamiliar pungency. This, I realized, must be the flavor of the *tochi*. It balanced the cloying sweetness of the adzuki beans perfectly.

That evening, at an elegantly rustic restaurant tucked into a wooded hillside, I ate *tochi mochi* again. This time, the sticky golden cakes were deep fried and immersed in a bowl of savory broth spiked with grated daikon radish and sliced scallions. They were crisply oily on the outside and meltingly soft inside, their slight

astringency countering the heaviness of the fried mochi just as it had the sweetness of the adzuki beans. I thought about the weed tempura that Hanaoka Reiko had served me in Kyushu and of how much better it was than tempura made from cultivated vegetables. Once again, these bitter, intense wild foods were drawing me in. Later, Shimizu Misato—a member of the Association to Protect Large Trees and Water Sources with whom I would spend the following day—told me she had heard the allure of *tochi mochi* compared to that of tobacco. No one would call it delicious in the conventional sense of the word, but there was something irresistibly attractive about it. *Tochi-no-mi*, she said, are nostalgic rather than tasty. They represent the flavor of the mountains, of a past so old it might well be woven into Japanese genes, as the forestry scientist Taniguchi Shingo had also suggested.

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## Notes

<sup>1</sup> Nagayama Hisao. *Wa no shoku zenshi* [A complete history of Japanese food]. Tokyo: Kawade Shobo Shinsha, 2017, pp. 17–18.

<sup>2</sup> Barucha, Zareen, and Jules Pretty. “The Roles and Values of Wild Foods in Agricultural

Systems." *Philosophical Transactions of the Royal Society B* 365, 2913–2926 (2010).

<sup>3</sup> Ohnuki-Tierney, Emiko. *Rice as Self: Japanese Identities through Time*. Princeton: Princeton University Press, 1994.

<sup>4</sup> Henmi Kinzaburo. *Taberareru yaso* [Edible wild plants]. Osaka: Hoikusha, 1967, pp. 115–116.

<sup>5</sup> The account is in Miyamoto's chapter "Nihonjin no shushoku" [Staple foods of the Japanese] in the book *Nihon no shokujii bunka* [The food culture of Japan], Naomichi Ishige and Isao Kumakura, eds. (Tokyo: Rural Culture Association Japan, 1999). pp. 63–65.

<sup>6</sup> Taniguchi Shingo, and Wada Ryoza, *Tochi no ki no shizenshi to tochi no mi no shokubunka* [A natural history of the Japanese horse chestnut tree and the food culture of horse chestnuts]. Tokyo: Nihon Shinrin Chosakai, 2007. p. 4.

<sup>7</sup> This chapter draws on several articles by Fujioka, Teshirogi, and their colleagues Iida Yoshihiko and Yotsuka Haruna on the social and economic roles of the Japanese horse chestnut. These include, Koki Teshirogi; Fujioka Yuichiro; and Iida Yoshihiko. "Natural and Social Environments in a Large Old-Growth Japanese Horse-Chestnut Forest in Shiga Prefecture, Central Japan." *Geographical Review of Japan Series A* 88-5 431–50 (2015);, Koki Teshirogi; Fujioka Yuichiro; and Iida Yoshihiko. "Regional Characteristics of Commodification of Japanese Horse Chestnut Food Products at Roadside Stations in Japan." *Quarterly Journal of Geography* 68, no. 2 (2016); and Fujioka Yuichiro; Yatsuka Haruna; and Iida Yoshihiko. "Commodification of Tochi Rice Cakes in Kutsuki, Shiga Prefecture, Central Japan," *Human Geography* 67, no. 4 (Jan. 2015), pp. 40–55.

<sup>8</sup> Nomoto Kan'ichi. *Tochi to mochi: Shoku no minzoku kozo wo saguru* [Horse chestnuts and rice cakes: The folklore of food]. Tokyo: Iwanami Shoten, 2005. pp. 40–41.

<sup>9</sup> Frazer, James, *The Golden Bough: A Study in Comparative Religion*. New York: MacMillan, 1894. Chapter 9.1.