

## The Cactus City, Kasugai, Japan

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**Abstract.** I'm a herpetologist specializing on exotic animals and exotic plants psychology and behavior. I was travelling around Japan and through my travels I was lucky to spot an interesting history and use of a specific type of cactus. The city called Cactus City in Japan were the community celebrating and promoting the health benefits and to eat cactus and, they managed to pass a bill to introduce cactus as a food in schools. This unusual devotion towards to xerophytes, coming from a natural disaster which has put part of Japan in a position where they had to explore the unknown. I found not only an interesting story but a unique approach to life through nature and community.

**Keywords:** green cladodes, cactus in Japan, *Opuntia cochenillifera*.

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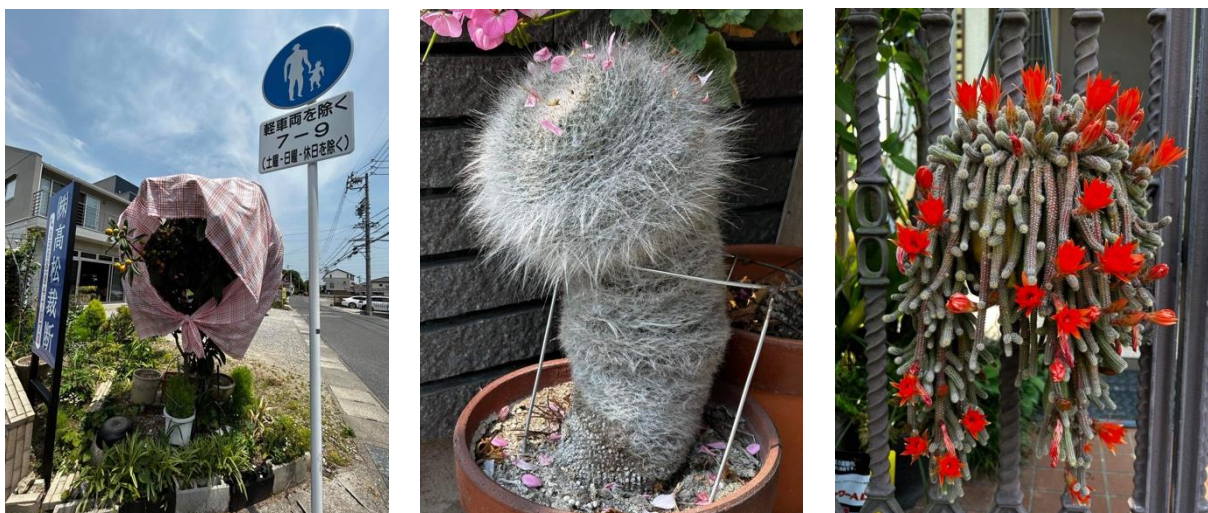
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I believe that when we think of going to Japan today, we still get filled with that warm feeling in our hearts because, apart from the futuristic Metropolis that Tokyo offers to us, we know that Japan has kept its treasures alive from the past; what we can also enjoy today, thanks to their respect and devotion to their mystical nature.

My first glimpse of the Japanese mentality was that they have this humble respect towards each other, and the people interested in coming here. But my biggest surprise was how important it is for them to be surrounded by nature, even in a huge, never sleeping city.



Instead of keeping their plants on the balcony or indoors, they leave them on the front of the flat to give them the right air and space to thrive and enjoy this subtropical climate of beautiful Japan.



Since I started to work on Xerophytes' psychology and Behaviour, I knew that they had developed new styles of care for these mysterious plants in Japan. I always wanted to get a closer look at a nursery where I could learn something or experience something I never knew.

Surfing through the internet, I found some pictures of statues shaped like cactuses, and I thought I'll start there. I found out that there is a city called Kasugai, lying just on the North-west from Nagoya, where I was staying at that time, and it takes only an hour to get there, so I told myself, why not. I wondered where these funny-looking cacti statues came from and for what purpose. After 2 L of green tea 3 lattes and a helping hand from online translators, I found out that in Kasugai, there is a famous cacti and succulent nursery where they grow a type of *Opuntia* not only for ornamental reasons but for selling them to restaurants and for personal use.



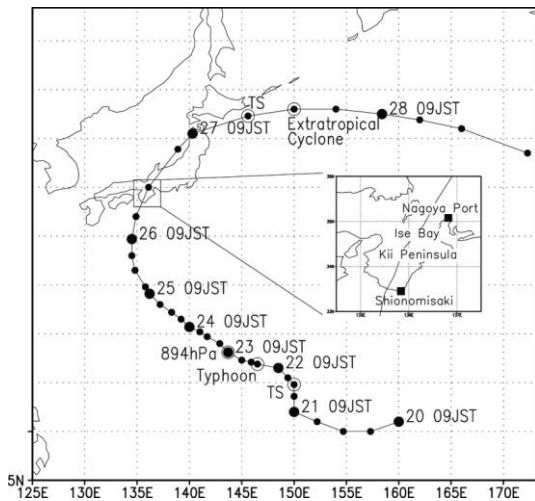
While I was heading towards Kasugai, I piled up my questions in my brain about the purpose of the excessive *Opuntia* growing.

For a while, I couldn't find anything online, and I started to create different doubtful scenarios that I was not going to find anything here; I was very wrong.

I was in a coffee house when I found a small memory that I was hearing for the first time, but I believe that shadow still follows some today like it happened yesterday.

In 1959 end of September, Japan was struck by a Natural phenomenon called typhoon Vera.





Typhoon Vera was a Category 5 Typhoon, which started devastation on the 20th and peaked on the 23rd but didn't fade till the 29th of September. Typhoon Vera created flooding that went throughout the country. The wave action damaged or destroyed 150,000 homes, decimating the modern-day city of Nagoya, and rendering its harbor useless. The strength and level of the storm's winds caused the storm stream to flood 310 km<sup>2</sup> of land.



Earthen breakwater, initially protecting areas along the northern part of Ise Bay, were breached, allowing water to pour into the populated area for days following the storm – like this happened in New Orleans in the days after Hurricane Katrina (2005). These areas remained flooded for up to four months. The contaminated floodwaters produced wide outbreaks of diseases including dysentery and decay and supplies of fresh drinking water dwindled quickly. Food shortages were widespread as the storm destroyed large areas of crops, many of which had been ready for harvest. These crop losses and the destruction of cities and railways caused great economic suffering in Japan.



In all, over 5,000 people were killed because of Super Typhoon Vera. Approximately 39,000 individuals went missing, and 1.6 million people were made homeless. The severe storm conditions of Super Typhoon Vera caused the most destruction and loss of life of any tropical cyclone in Japanese history.

I was shocked and heartbroken, looking through the pictures and the videos from the archive on the internet. But I still didn't understand how this could be related to growing cactuses excessively. Till I found out that after super Typhoon Vera's devastating work, farmers had to find new food sources that they could use to feed their families. At that time in Japan, farmers were already growing Cactuses on the side, so it was accessible and a natural choice to try it out and find a way to use it.



They surely didn't know that with their newly found food source, they'll create a new tradition and a brighter future for not only the next generation but for Japan and everyone who wants to understand our nature, live healthier, and learn more about agriculture. When Japan saw a cactus boom in the 1960s, the city had more than 50 farmers producing the plant, but the number has since dropped to only a handful due to aging. Goto-san grandfather was there when the Typhoon struck Japan. He experienced the devastating power of nature and was one of the farmers who took part in growing *Opuntia* to survive the lack of food source.



Fearing cactus farmers would disappear from the city, the promotional project was launched in cooperation with local restaurants to develop food products using prickly pear. By 2006, The city, with a population of some 300,000, was growing about 200 different types of cactus. Famous Local farmer Hiromitsu Goto, with his 3<sup>rd</sup> generation nursery and the help of his mother he, has set up a special greenhouse with edible cactuses to support the Kasugai Saboten (Cactus) Project, launched by the city's Chamber of Commerce and farmers in 2006.

Goto-san showed me his opuntia farm, where everything is started in 2018; with his mother's help, they started to plant the first *Opuntia* which they still standing there as a reminder of the beginning and watching carefully to the opposite side where the young *Opuntia*'s are growing strong under the fine cover. 17years have passed since the project was launched, and Goto-san was





happy to share with me that the project not only helped to promote to use of this cactus as an ingredient for our food but, they have managed to pass a bill to recognise its health benefits and to officially introduce it as an optional food choice at schools in Japan.



When you are wondering about your own *Opuntia* at home, if you can eat it. Well, yes and no. It's depending on which *Opuntia* we are talking about, as there are over 150 prickly pear cactus over the world today, and it has been used as a food for centuries. *Opuntia*, or by the other name Prickly Pear it's a genus of the flowering plant in the cactus family Cactaceae. Every prickly pear has different health benefits, and before you eat anything out of your ordinary diet, make sure that you consult with a professional or with your doctor. The prickly pear they use in Kasugai is called cochineal cactus (*Opuntia cochenillifera*), which is distributed in Mexico, the Caribbean, Central Mexico, Panama, Cuba, and Puerto Rico. You can eat the pods, which contain antioxidants, vitamin C, vitamin E, and Vitamin D (which mostly can be found in the fruit), and if we are talking about fatty acids, we can find Omega-3, Omega-6, and Omega-9, but the main identified saturated fatty acids are palmitic and stearin acids. So, if you ever wonder about how edible is your *Opuntia* is, well, considering their valuable contents of fibres, vitamins, fatty acids, phenolic compounds, and antioxidants, we can say it's a functional food source.

So, what's next for Goto-san at Goto Saboten Nursery, well with his help, Kasugai City managed to raise awareness about the health benefits of *Opuntia*, he is growing *Opuntia* in a volume that is just about to send out 100kg of *Opuntia* cactus pods for schools and another 20 kg for restaurants.



He told me that his goal is not only to grow and make xerophytes more popular but also to create an opportunity for everyone to experience the beauty of agriculture and the health benefits of these cactuses. While Goto-san's history, work, and his vision echoing in my head on the way back to the city, I'm finding my mind wondering in the past where a small number of farmers stepped up in time of need to help their community. Today Kasugai is not only a city but a place with a very important heritage and responsibility. Alongside Goto-san together, the city has grown into the

centre of edible cactus production, to the place where people celebrate agriculture and xerophytes so everyone can have the opportunity to go and experience the magic of the Cactus City, Kasugai.

**Compliance with ethical standards**

Not apply

**Declaration of competing interest**

The author declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.