Preserving Potatoes

Once, I had a conversation with a Peruvian about potatoes. The fact that we were traveling across Lake Titicaca in a Small motorboat bouncing among the waves with little else to do may have elevated our motivation to talk about something. But, not surprisingly, I was in for a surprise.

Many developing countries are known for their dependence upon a particular crop. As we know, Asian countries have a long association with rice, as does Mexico with corn or maize, as well as wheat in the ancient city-states of the Fertile Crescent, including the Babylonian and Assyrian empires. Potato remains have been found preserved underground in Peru that suggest potato cultivation started there over 7000 years ago, before the birth of Ancient Egypt. Potato cultivation formed the basis of the 13th century Inca Empire which existed in the Andean region typically at an elevation of 12,000 feet above sea level. Anyone or anything that lives at this height must be hearty and tenacious. The sun can be intense, but the temperature can drop to freezing at night; a swing of 50 to 60 degrees Fahrenheit during a day is not uncommon. Add to this limited rainfall and poor soil, so typical crops such as corn or wheat cannot likely survive. But the potato can. And, due to its more than 200 varieties, they can be suited to many microclimates allowing the food to be utilized as the core of the altiplano diet. Arable land was scarce in this mountainous region and so narrow terraces were carved where farmers could plant without the benefit of animals or plows.

As with many crops, long term storage was a challenge and this is where the Incas utilized a unique method for preserving potatoes to insure a steady food supply. Potatoes are about 80% water, and are therefore susceptible to freezing during the cold nights presumably leaving them inedible. But, therein hides an advantage. First the farmers place the potatoes out on the ground overnight to freeze them, and then in the morning, they trample the potatoes with their feet and leave them exposed to the intense warmth of the sun. This process (repeated three times) drives the moisture out of the potatoes, resulting in a freeze-dried product, called chuño. Put into boiling water, the chuño softens rapidly and is soon ready to eat providing most of the valuable nutrients one needs. Unused, the chuño can be stored in a frozen and sealed room for up to ten years. It was the original primitive method of what we today call freeze-drying to preserve food for camping trips or even space travel. By 1570, the Spanish explorers had brought the potato home, and from there it became an important part of the European, and later North American diet.

Today in Peru, the chuño is still made, but the modern potato regularly appears as a common element of daily food life including snacks such as chips and churros, main meals including Papa Rellena (filled potatoes), and even a sweet potato dessert called Camotillo. So next time you visit, Bon appétit, or in Quechua de Cuzco: Misk’illantaña mikhukuy. For more, see Potato, by Larry Zuckerman.

Van Gogh, Potato Eaters, (1885) Illustrates the new European staple for peasants

Terraced land in Machu Picchu, home of the Inca Empire, Peru, 2007