

Japan's Salt Renaissance

Demand for Natural and Delicious Salt Production



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It is not going too far to say that salt plays a great role in the maturity of the food cultures of every region of the world, making it something we are able to enjoy on a daily basis. In nearly every country, there is a production region specializing in the mining of fine salt. I envision the rediscovery of the value of salt as it was cultivated in Japan's history and tradition, and the creation of a new era with salt worthy of the value placed on it. That is with a strong hope that the impression of salt as merely an essential ingredient in Japanese cuisine be changed to one where salt itself is appreciated. Though salt is a precious natural resource and an essential mineral in the diet of human beings, I believe that the use of salt produced in traditional, manual ways rather than by industrial production methods, is the base of a fulfilling food culture. This has been so since the time when humans first realized that flavor was at the root of a satisfying and fulfilling life.

Ancient Japan and Medieval Salt Production

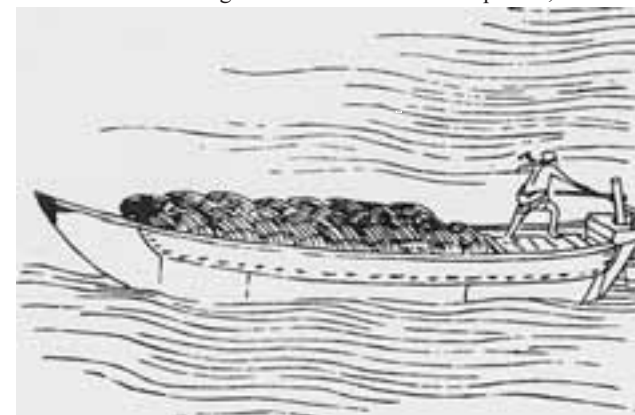
Though stratum of rock salt can be found throughout most of the world, there are neither salt layers nor salt lakes in Japan. In addition, climatic conditions make the evaporation of seawater for salt production impossible. The ancient Japanese harvested salt by boiling seawater. Remains from the Jomon period have uncovered cone-shaped earthen pots which appear to have been used in the production of salt. With the expansion of agriculture during the later part of the Jomon period and the Yayoi period, the art of concentrating seawater using sea grasses and sand was introduced to meet the increased demand for salt created with the change in diet.

Before long, the Asuka period of the sixth century saw the development of a new method of salt production, unique to Japan, known as "mojiyaki" in which sea grasses were burned to extract salt. In this method, sea grasses gathered from the beach were repeatedly moistened with sea water and sun dried to concentrate the salt,



The Noto salt farm: utilizing the "nui" extracting device

and then burned. The ashes were then mixed with sea water and boiled down in an earthen kettle to produce salt fit for consumption. Japan's oldest anthology refers to the girl of the sea who gathers the precious sea grasses in the morning calm and burns them in the evening calm. With the Nara period, salt farms



Riverboats were used for trade

called "agehamashiki" were developed for the production of salt. After leveling coastal sands, sea water was drawn up, emptied in the salt farm, and dried with the rays of the sun. The salt-rich sands were then collected and put into a wooden-framed extracting device called a "nui," where sea water with a higher density of salt was produced. This method of salt production was conducted on beaches around the country, but the favorable climatic and geographical conditions of the Setouchi and Tokai regions aided these areas in the advancement of salt farms. During the sixteenth century, advances were made which took advantage of the ebb and flow of the tide, and the salt industry expanded with increased circulation capabilities attained by the use of salt barges centered around the ports of Edo (Tokyo) and Osaka.

Salt Production Learned from the Knowledge of our Predecessors

Salt production in Japan was made possible through the multi-process method of concentrating, boiling, roasting, and burning various stages of seawater. During the Nara and Heian periods, the time- and skill-intensive art of salt refining was developed. This period saw the introduction and distribution of a variety of types of salt such as those known in Japan as "sekishio," "katashio," "kuroshio" (solid "yakishio"), "senshio" or "shiroshio," and "arashio." The reason that the production of salt is such a sensitive process is that when heat is first applied to condensed seawater, "salt seeds" develop on the surface of the liquid. These salt seeds gradually become larger and crystals form in the liquid. As these



An illustration of the Ako salt farm by Hiroshige Sandai

changes take place unrestricted, this mixture is said to be alive. With the spread of the crystals, and depending upon the shape and size of the crystals formed during mixing, the first crystals formed are removed. The remaining mixture is then roasted in a flat pot to produce the highest quality pure salt, to which sea water and the brine from the original liquid are added. The entire mixture is then boiled down. The brine is removed using a flat bamboo basket to complete the production of high-grade salt, which can then be roasted over a long period of time to produce "senshio" or "yakishio."

During the Edo period, high-grade salt from the Setouchi salt farms was preferred in metropolitan regions such as Edo and Osaka, while the lower grade salts were sold in the Tohoku region. It is said that lower grade salts from the Bantshuuko (near Osaka) region was sold for nearly ten times its usual rate when transported by salt barge to Yonezawa, and it is thought that the unusually coarse, lower grade salt became intertwined with the cooking of the Tohoku region, aiding in the development of the traditional saltiness of foods particular to that region.

Since Japan is not able to extract salt crystals from sea water in the same way that France, Italy, and China do, the experience, knowledge, and know how gained from the originality and perseverance of our predecessors continues to succeed even today.

"Yakishio" and the Preserving of Salt

Long ago and beginning with the large-scale stores, wealthy farming families maintained salt warehouses where salt, held in woven straw bags, was preserved. Bags for the collection of the brine that developed on the surface of the salt as water absorbed from the humidity outside accumulated were placed under the bags of salt. Over a period of 2 or 3 years, this process, called "salt ripening" produced a "ripe," milder salt. Another method of preservation was to fry the salt. Fried salt loses some of its bitterness as well as its ability to absorb water, making it a very dry salt which can be stored over a long period of time.

In Medieval times, people were required to keep common *yakishio* for the payment of taxes collected by royalty, nobility, and temples, and just as described in "teshiosara," a cooking book of the time, the trading of salt expanded greatly. To this day, salt gathered from Mishiohama is placed inside an earthen pot shaped like a cone and fried in a ceremony at the Grand Shrines of Ise. In recent years unglazed *yakishio* pots, the size of a teacup and dating from the Edo period, have been uncovered from the remains of castles and houses



A seawater salt farm producing salt asit was made in Setouchi

belonging to the wealthy. When salt was finely ground and fried in these pots over a fire made with pine wood, a chemical reaction within the pot created delicately flavored salts. Though it is said that this custom originated in the Osaka region during the Azuji Momoyama period, these small pots have also been excavated from the remains of the home of a wealthy merchant and Deshima, where the Dutch traded, in Nagasaki. Record of the purchase of *tsuboshioyaki* also remains, as it seems that they were purchased to help relieve the problems of a lack of salt in the diet of sailors.

When sea bream is seasoned with salt and roasted, the thick meat gradually loses its saltiness. It is said that to make up for this, *tsuboshioyaki* was an addition to the table at banquets given by the upper classes. The addition of *tsuboshioyaki* to the sea bream dish is also recorded in a publication describing the reception banquet given by the shogunate to honor Commodore Perry of the Black Ship. In the houses of commoners, roasted salt was placed in small dishes and used as a seasoning at mealtime. It can clearly be said that these records document the roots of table salt.

The Salt Road and Food Culture

Trunk lines by which salt could be transported in large quantities from the coastal salt farms inland were developed. In mountainous regions, salt was transported and sold by peddlers using oxen and horses. Since people living inland possessed riverboats for trading with coastal regions, trade centers were usually located inland. Salt, dried salted fish, and other marine products were shipped inland while rice, grains, firewood, and charcoal were transported to coastal regions, also promoting the trade of such regional goods as safflower, hemp, lumber, and tobacco, creating a "Salt Road" and therefore a Food Culture Road.

Kyoto became a representative base of the Salt Road with the trade routes utilizing the Takase river, Yodo river, Setonai sea, Uji river, Otsugai route, and Lake Biwa. With foods from all over Japan coming to Kyoto, the refined cuisine of the capitol was developed. In the year 927, the nobility of the capitol required that various marine products be paid as tax. Representative of the items given as tax were dried fish, salted fish-head cartilage, pickled trout, salted trout, salmon roe, the salted intestines of sea cucumber, abalone, and other salted foods such as boar jerky which were served with alcohol. Salt and the Salt Road are the source of many of Japan's traditional preserved foods such as carp sushi, salted fish organs, soy fish, pickled vegetables, and the distilled foods such as *miso* and soy sauce.

A Subtle Saltiness

It is said that a standard for Italian cuisine is that "when making a good olive oil, the use of balsamic vinegar should left to a greedy personality that will use so much as to be wasteful, while only salt should be used by a wise person." This standard expresses the difficulty in bringing a subtle saltiness to the flavor of cooking ingredients. With just an instant's discretion, the flavor of a dish is created. It is said that Japanese chefs judge the flavor a dish should have by looking at the face of the customer. For example, "This customer is sweating after a



The "mojiyaki" ritual

game of golf," so he serves a heavily seasoned dish. If we analyze this exquisite chef's artful sense of the level of saltiness a dish should include in scientific terms, we find that a salt concentration of 0.9% to 1.1% provides a satisfying saltiness, while a concentration of 0.7% is rather flavorless. Salt is also used in processed foods such as ham, sausage, and fish paste to solidify the water-soluble proteins found in meats and fish, and to remove the liquids and preserve the vivid colors of pickles. Salt, therefore, becomes the winning hand in developing satisfying flavor and texture in foods.

In comparing the ancient production of high-grade salt using flat pots with today's vacuum method, we find that the old way produced nearly twice the volume. In other words, fine adjustment to flavor and the production of salt for a variety of uses was possible. Since salt produced today is coarse with a high gravity, even a small amount has a large impact on flavor. When using salt in cooking, the range of flavor in which the salt can be considered beneficial is very narrow making the use of salt rather difficult. The first step in the realization of the appreciation of salt begins with the question, "Can't half of the volume of salt currently produced be light salt."

A Journey in Search of Light Salt

I attended the international symposium on salt held in 1973 in Houston, Texas. Having had the opportunity to visit salt mines and salt lakes around the world, I attended this symposium with the desire to experience the current circumstances of salt production in the U.S. It was during this trip, on a visit to a salt processing plant in St. Clair, a suburb of Detroit, Michigan, that I discovered the flake salt known as Alberger Salt, which is used as a catalyst in the production of salt crystals on the surface of the original liquid. Differing from the six-sided crystals produced by the standard vacuum evaporation process, the crystals created in this new process produced the same capacity of salt crystals with half the weight.

Surprised by this, I realized the opportunity for the production of light salt. Five years later, while pursuing the pedigree of light salt throughout France, Italy, Spain, and Greece, I was overjoyed to find "light salt" in a foodstuffs shop in Oxford, a suburb of London. It was a mass of salt wrapped in waxed paper and measuring about 10cm × 20cm known as cut lump salt. This cut lump salt, looking just like pumice, was produced by dissolving rock salt, boiling it down in a flat pot, and drying it in a wooden box. Natural rock salt is clouded with ash-col-



An introduction to salt's new appeal at a popular Monaco restaurant

ored dirt and heavy metals, and contains impurities which can cause physical damage. The resourcefulness of the people who developed this safe cut lump salt by dissolving and forcing recrystallization is impressive.

Le Fleur de Sel (Flower of Salt) Boom

On a salt tour of southern France, northern Italy, and Sicily in May of this year, I was struck by the fact that the table salt used in the kitchens of high class foodstuffs shops was all natural sea salt. In these regions, the use of organic ingredients and natural sea salt in cooking has become a boom.

In a restaurant in Monaco's Hotel de Paris, a restaurant which manages popular French chefs, the phrase "Enjoy the harmony of sweetness and saltiness" is attached to a sweet mousse and salty vanilla ice cream dessert which was popular in the court of Louis XV. Beginning with organic salts, Fleur de Sel (Flower of Salt) has become a main current in the salt section of such high class foodstuff stores as Fauchon, and is used as the table salt in well known French and Italian restaurants. A sudden and radical rise in temperature from April to July causes salt crystals, which look like small, white flowers, to rise and float on the sur-

face of the salt farms. The crystals are then manually collected by the salt workmen in the traditional skill-intensive process. With the slightest sweetness included in the mild saltiness, this salt is providing a base for the new flavor of French cuisine.

The Natural Sea Salt Era

In Japan today, there is no rule regarding the good-flavored and bad-flavored salt. In this age of processed foods, the production of salt has become a process that can meet the needs of processed foods. High quality, low cost, and mass production are the requirements of today's salt production, so that finally we end up judging the quality of salt by the purity of the sodium chloride it contains. In the ion exchange process, adding magnesium and potassium to pure sodium chloride salt to achieve a mineral balance has become the trend in Japanese natural salt production. It is thought, however, that with the support of consumers searching for a more natural and abundant diet, the trend will shift from the use of industrially produced salts to handmade individual salts, and that we will see the expansion of natural sea salt markets.

As a salt dealer, I am constantly on the lookout for a salt worth boasting about. Having dealt with over 700 varieties of salt-related items, it is time to create a new era that places value on salt with the concept of natural sea salt as its axis. I am convinced that it is possible to develop new kitchen salts and table salts, which are delicious, light, and can be used in a variety of ways, from safe and pure sea water using traditional manual methods.

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With an aim towards the stable production and supply of high quality, low priced, salt, the 100-year history of government monopoly ended with the deregulation of salt in 2002. The hopes for economic and functional salt have been realized. We have reached an era whose theme is not uniformity in mass-produced salt, but rather a theme based on the production of natural, delicious salt as requested by consumers. Now professionals with the knowledge and know how to produce salt most suited to the varieties of food culture are being sought out.

The producer who can respond precisely to the needs of consumers, who pursues the possibilities of salt from broad angles, and can propose plans for the best salts will find pleasure and pride in his salts.