



MATCHA

THE GOSSAMER TEA POWDER OF JAPAN

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Green tea lovers know that there is a striking difference between Japanese and Chinese green teas. A comparison of teas from these two countries would present a wonderful example of ‘cultural dissimilarity’ in taste, aroma, and appearance as well. In fact, it is safe to say that the only similarity that these two styles of tea bear to one another is that they are each manufactured without any oxidation of the fresh leaf, which therefore classifies both of these teas as green tea.

One of the most important green teas that symbolizes Japan’s unique tea culture is matcha, the vivid, emerald-green, finely powdered tea. Powdered tea is rarely drunk in China today, but the roots of powdered tea drinking traveled to Japan from China during the height of the lavish Song dynasty (960-1279) tea culture.

Centuries ago, China was the only country that possessed the secrets of tea cultivation and manufacture. During the Tang dynasty (618-907) Lu Yu, the father of tea, shaped China’s fledgling tea drinking culture, and established tea drinking rituals that still have relevance today. Albeit, this early tea was a far cry from the sophisticated leaf tea that China would eventually begin producing centuries later; but Japanese priests and monks visiting China on diplomatic and religious missions during this time were intrigued by this wondrous beverage. They brought both the knowledge of and a taste for tea back to Japan with them.

In Tang-era China, it was the fashion to drink tea that had been scraped from a small tea cake made of compressed, coarse leaf that had been steamed, then crushed and bound with a small amount of plum juice and dried. Sometimes the bits of tea cake would be ground into a coarse powder, but either way this would be placed in a pottery vessel to which hot water was added. Pieces of onion, jujubes, dogwood berries and spices would be added to the pot as well, or in some cases, just salt. Either way, the tea mixture would be served in intricately glazed, low and wide tea bowls known as *tenmoku*.

This style of tea brewing and drinking in China went unchanged until the Song dynasty (960-1279). During this time, tea continued to be scraped from tea cakes, but a new refinement was introduced. Tea cakes were now made from leaf tea that had been powdered, and a kind of tea ‘mud’ was used to fashion the cakes. These cakes were scraped, and the resultant pieces were ground into a very fine powder and placed in individual tea bowls. Water would be added to the powder, and this tea would be whipped to a frothy brew.

New tools were developed to cut, grind, and sieve the tea into a fine powder. Learning the art of properly whipped tea was the goal of every Tea Master and tea devotee. In this way, the Song took the tea traditions developed by the Tang and elaborated on them by bringing new refinement to tea drinking by their use of whipped, powdered tea. To accommodate this new



Tea and tea drinking is central to the experience and practice of *Chanoyu*. In this intimate gathering, the Tea Master carefully uses a bamboo whisk and precise hand movements to prepare a bowl of whipped tea for each guest. The tea bowls, known as *chawans*, are large in size, slightly rough in texture, earthy in color and appearance, and are most prized when they have been hand-made by a potter. Although the generous proportions of these bowls require that the guest cradle it in two hands, only 3 to 4 ounces of tea is prepared by the Tea Master for each guest.

As is true for all aspects of tea and tea culture in Japan, the cultivation and production of matcha powder is very precise and detailed, and the attention to quality is unrelenting. As an outsider peering into Japan's tea culture, matcha embodies the essence of a simple thing that can take a lifetime to understand in all of its complexities and nuance.

Matcha is referred to as powdered tea, but matcha should by no means be thought of as just ground-up leaf tea. It is a precise combination of leaf and processing that results in a slightly sweet, slightly astringent tea that possesses an astonishing array of invigorating tastes, a velvety texture and a rich, vivid, emerald-green color that makes matcha unique in the world of tea.

Matcha is manufactured from shade grown tea that is cultivated in a similar fashion to Japan's other exclusive tea—gyokuro. In fact, tea farmers who grow leaf for gyokuro almost always pluck leaf for matcha as well. The difference between the cultivation and manufacture of these two famous shaded teas is slight but important, and it has to do with:

The season of the pluck.

The configuration of the pluck.

The degree of shading and the shade material used.

The differences in the manufacturing technique applied to each tea in the tea factory.

The visual appearance of the finished tea: matcha is a rich, matte green powder and gyokuro is rolled into slender, needle-like, dark forest-green colored leaf.

The tea bushes that yield these teas spend most of their spring growth cycle leafing out under a tented cover away from sunlight. After the first initial growth spurt in the spring, a trellis is erected over the tea bushes, and densely woven netting is draped over the trellis. This arrangement, called a *tana*, covers both the top and sides of the trellis (it is roomy enough for tea pluckers

style of tea drinking, new tea bowls came into popularity. These bowls were narrow at the bottom and wide at the top, and were made in sumptuous glaze colors and designs. They were shaped to accommodate the use of the bamboo tea whisk in the tea bowl.

Unfortunately for the worldly Song, their love affair with tea and tea equipage came to an abrupt end when China was overtaken by Mongol outsiders and Kublai Khan established his Yuan dynasty (1271-1368).

Despite this unhappy turn of events for the Song-era Chinese, the Japanese were able to continue the practice of drinking whipped tea. By this time, the Japanese, who had revered first the Tang and later the Song style of tea drinking rituals, had begun to adapt whipped and powdered tea rituals to fit their own cultural style and uniquely Japanese ideas of beauty and high art. This revered Chinese tea-drinking technique, combined with Japanese aesthetics and rituals of prayer, Zen meditation and philosophical ideals ultimately led to a pure, precise tea drinking experience based on Japanese formality and principles.

Later, in the 16th-17th century, the practice of *Chanoyu*, the Japanese tea ceremony, was perfected. The Japanese eliminated the Song-era powdered cake tea and perfected the way to process leaf tea into a gossamer powder that required nothing more than simply sieving the tea before each use to remove any small lumps.



to work inside) and the netting blocks roughly 90% of the sunlight from reaching the plants. The plants, nevertheless, still grow, and a peek under the netting reveals elongated leaf sets that have stretched towards the light.

The reason for shading the bushes is to increase chlorophyll production in the plants by reducing natural photosynthesis in the leaves. The extra chlorophyll changes the balance of the natural components of the leaf, but especially affects the proportion of L-theanine (amino acid) which is responsible for flavor, as well as caffeine, which controls bitterness, and catechins (antioxidants) which give tea its texture. This man-made forced change in leaf chemistry yields leaves that are soft, and tea that is slightly astringent, yet possesses the sweet and buttery undertones for which high-grade gyokuro and matcha are renowned. Additionally, matcha contains a high degree of *umami*—the quality of mouthfeel derived from the presence of certain amino acids that is defined as the 5th element of taste, along with bitter, salty, sour and sweet.

Although these are coddled bushes, a peek beneath the *tana* allows a view into the odd world of plants that grow without the usual amount of light. These plants emit an eerie color due to the lack of sunlight, and their new growth is lankier and thinner than that of their cousins growing in full sunlight in traditional tea fields.

Gyokuro production occurs in the spring, and is followed closely behind by matcha production. Matcha is made from the spring pluck because it has the best leaf structure and flavor. When we visited Uji (Kyoto Prefecture) in May, one of the growers that we visited told us that he plucks the bud and the next two leaves when he is picking for gyokuro (for competition grade gyokuro only the bud is selected) but the bud and the next three leaves for matcha.

He uses this extra, slightly older third leaf to ‘influence’ the final flavor of his matcha. Most matcha producers make two types of premium matcha; one for *usacha* and one for *koicha*, the two types of whipped

tea that are served in the Japanese tea ceremony. All tea ceremonies serve *usucha*, or thin tea, but some serve an additional, communal cup of *koicha*, or thick tea, later in the ceremony. *Koicha* is made of the leaves from older tea bushes, and the cost of matcha made for *koicha* is considerably higher as a result. (*Koicha* is a stronger tasting and more densely textured tea. It is prepared with more tea and less water than *usucha*, and is not frothed with a whisk. Instead, it is gently stirred with a bamboo tea spoon (*chasaku*) in the *chawan* so as to not create bubbles on the surface of the tea. Bubbles are OK with *usucha*, not with *koicha*.)

Once the fresh leaves are plucked, they must be taken immediately to the tea factory. Here, these leaves will be processed into tencha, and then into matcha. The process for manufacturing tencha (and gyokuro) is slightly different from that used to make other Japanese green teas such as sencha. Some tea producers bring their tea to a tencha factory, others utilize a traditional sencha factory that has been outfitted with the additional pieces of equipment necessary for tencha production.

Either way, as soon as the fresh leaf enters the tencha factory it will be placed on a conveyor belt that will first pass it through a steaming chamber (all Japanese green teas are steamed in this manner). This process softens the leaf, prevents oxidation of the leaf, and retains the natural leaf color; it also begins the process of breaking down the cellular structure of the leaf.

Warm air will then blow the leaves up into tall, enclosed, vertical nylon cylinders where they will be kept aloft for primary drying. After this, the leaves

are cooled, spread flat on a conveyor belt and passed through another drying oven. Unlike sencha production, this leaf will not be rolled or shaped—it must remain flat throughout the steps of manufacture. From this point, the leaf will be cut into uniform pieces and the veins and stems are removed from each individual leaf. What remains (after a final electrostatic cleaning to remove lingering bits of stems, etc.) is the heart-matter of the tea leaf, which is now called tencha.

At this point, the tencha can be vacuum-packed and stored in temperature-controlled freezers until it is needed. The final step that turns tencha into matcha takes place in the grinding room. Here, the tencha is put into a small hopper that feeds into the center of two granite grinding mills that slowly pulverize the leaf into a gossamer powder. The mills are small and sit on tabletops—they are roughly the same size as a home food processor. In the earlier days, the grinding mills were turned by hand. Today, the grinders are operated by command of a control panel, but they must still move at a very slow speed in order to properly obtain precisely ground, micron-fine tea powder.

If the grinders operate too fast, the tencha will overheat and the delicate flavor of the tea will be lost and the silkiness of the powder will be compromised. Matcha producers operate the speed of their grinders so that they obtain no more than 15 grams of matcha per hour, per grinder. So even with modern intervention, it remains a slow and laborious process. Additionally, adjustments to the stones are occasionally required for the mills to operate properly. This detailed work is carried out by craftsmen who ply their traditional craft of adjusting and honing these stone mills by hand using custom-made tools.

Matcha is produced in several regions of Japan—the town of Uji, near Kyoto City in Kyoto Prefecture, Nishio in Aichi Prefecture, Shizuoka in Shizuoka Prefecture and northern Kyushu Island. Most tea companies make several different matchas, which they make from a careful blend of tenchas from different growers and different regions. Each matcha has a different taste, fragrance, color and even particle size. Matcha producers create specific signature matcha blends for their clients based on the requirements of cost, flavor, color, fineness, and usage. Ceremonial grades of matcha are the most costly, while matcha that is used as a baking or cooking ingredient is considerably cheaper and less finely powdered.





The most expensive matcha comes from Uji, the oldest tea gardens in Japan. Uji tea producers provide matcha to Japan's oldest, venerable tea shops and temples in Uji and Kyoto and the established tea schools (Urasenke, Omotesenke, Mushanokōjisenke, Sohenryu and more) who teach the philosophy and skills of *Chanoyu*. For *Chanoyu*, each trained tea master chooses the matcha he or she wishes to use based on the rich color, individual flavor and the overall quality of the matcha appropriate for the type of tea ceremony they will be conducting. Or perhaps they choose the matcha favored by the present or former Grand Master of the tea school where they trained.

In Japan, matcha is sold in sealed canisters of 20, 40, 100 or 200 grams. Because it is ground micron-fine, matcha stales very quickly, so purchasing small quantities as needed insures that the tea will retain both color, flavor and antioxidant benefit. Matcha ranges in price from modest offerings suitable for use in desserts and contemporary tea-drink making (\$8.00-\$16.00 per 20 grams) to the best ceremonial grades reserved for use in formal Japanese tea ceremonies (\$40.00-\$100.00 for 20-40 grams).

In Japan, shopping for matcha offers a seemingly endless array of confusing choices. Matcha is not sold by place of origin, but is given a tea name that recalls a season, a concept, a feeling or emotion, or something lovely that is admired in nature ("Snow-covered Pines", "Flying Cranes", etc.). Or the matcha may be named by the Grand Master of one of the Schools of the Japanese Tea Ceremony for its suitability to that tea tradition. To add to the confusion, the same matcha packed in a 20-gram or 40-gram size can have a different name. Some matcha is packed and sold for seasonal use, such as matcha sold from early December to early January. It is best to focus on what you want to use the matcha for, decide what you can afford to purchase, and then ask for advice.

In summary, matcha is not simply ground-up tea leaf. It is an essential part of the rich, deep, precise, intricate and fascinating Japanese tea experience of yesterday and today.