

CHAPTER 7-2

GARDENING: JAPANESE MOSS GARDENS

TABLE OF CONTENTS

Moss Gardens.....	7-2-2
Japanese Moss Gardens.....	7-2-2
Types of Japanese Moss Gardens.....	7-2-7
Dangers to Gardens	7-2-10
Educational Gardens	7-2-12
Variations	7-2-14
Charcoal Gardens	7-2-15
Dominant Species.....	7-2-15
Summary	7-2-17
Acknowledgments.....	7-2-17
Literature Cited	7-2-17

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Figure 1. Kyoto Gold Temple moss garden in fall. Photo courtesy of Leng Yang.

Moss Gardens

It is the end of a hectic week and your mind is racing between projects nagging to be finished before another set entreats you. The afternoon hour is late and Friday traffic winds about you in the fury to be somewhere else. Children shout and horns warn of impending danger, or just impatience. You turn the corner and park in the only remaining spot next to the shrouded garden. The Japanese have taught us how to construct a fence that deflects the city's clamor, creating a refuge from the turmoil that bombards our daily lives. But within that fence, in the midst of the city, is a garden – a moss garden. Barely 50 meters on a side, the garden is a far away and peaceful world. Here all seems to melt away as the soft mountains in the distance, created by gentle hills of moss, blend into the quiet fields of green before us. At last we can relax. In such a setting, we can reflect on all that is beautiful and calm.

For the caretaker of this garden, be it large or small, it certainly requires an understanding of mosses in all their ecological and physiological glory. Although the Japanese have been successful for centuries, moss gardening is no small challenge.

Japanese Moss Gardens

Perhaps originating in their present usage during Japan's feudal era (12th-19th centuries), mosses have become a part of Japanese tradition (Schenk 1997). In Japanese, *koke* means moss and *dera* means temple, hence the name of the moss temple *kokedera* (Figure 1). However, as far back as a thousand years ago the Zen Buddhist monks wrote of the mosses in their temple gardens. Yet the rest of the world is just beginning to understand and copy the tranquility of the moss garden.

Bryophytes have always been greatly appreciated as a precious attribute in Japanese gardens (Figure 1). Some of the Japanese gardens are known from as early as the 7th

century A.D. (Seike *et al.* 1980). The earliest of these were based on the T'ang China gardens, but they soon developed their own character, resembling the Japanese landscape. The theme generally reflects the Japanese religion of Shinto, wherein the world is viewed as "infused with the primeval forces of creation" (Seike *et al.* 1980).

By the fifteenth and sixteenth centuries, the scale of the gardens was smaller, opening the way for miniature plants such as bryophytes to provide the feeling of expanse. Natural features such as ponds and waterfalls were represented by stone and gravel (Figure 2). Unlike gardens throughout most of the world, the Japanese garden is ruled by simplicity. Following this theme of tranquility, the garden must not appear manicured, but rather must maintain a natural look, as in Figure 3. For this reason, as the gardens became the setting for the tea ceremony, they also continued this tradition of a natural look. To avoid the austerity of too much care, the Tea Masters considered the most appropriate caretakers to be old men (Figure 4) and boys who would not be too painstaking in their care to sweep and clean the garden. Having leaves tucked among the rocks or at the bases of trees provides interest (A. L. Sadler in Seike *et al.* 1980).



Figure 2. This moss is interrupted by a sand garden at Ginkakuji, Kyoto, Japan. This sand resembles a river and the rock an island. Photo by Janice Glime.



Figure 3. Ginkakuji Silver Temple Moss Garden with *Polytrichum* in Kyoto, Japan. Stones give the sense of boulders, giving the feeling of mountain crags, adding focus and depth. Photo by Janice Glime.

Public gardens often have a gate at the entrance. Even these offer serenity and often have bryophytes growing on the roof of the gate (Figure 5). The gate gives one the impression of shutting out the world of work, noise, and traffic.



Figure 4. Ginkakuji moss gardener using a broom to clean leaves from the moss garden. Photo by Janice Glime.



Figure 5. Kyoto gold temple with mosses growing on the entrance gate. Photo courtesy of Leng Yang.

Courtyard gardens (Figure 6-Figure 7) are small and provide a relaxing view from a window or doorway. Generally only a few plants provide highlights to an arrangement of gravel and rocks. Mosses may be used here to make a green layer on the ground, or may be islands in a bed of gravel (Figure 8) that simulates the sea or a pond (Seike *et al.* 1980). In even larger courtyards and many moss gardens, the pond may be real, with koi swimming about (Figure 9).



Figure 6. Courtyard with moss garden outside window of Kanazawa Historical Pharmacist (merchant) residence in Japan. Photo courtesy of Elin LeClaire.



Figure 7. Courtyard garden at Tofukuji Reiunin, Japan. Photo from Wikimedia Commons.



Figure 8. Zuihō-in garden, the Garden of the Blissful Mountain, in Kyoto, Japan. Rocks and raked sand in wave formation simulate the ocean, with mosses to simulate islands. Photo from Wikimedia Commons.



Figure 9. Shrine and pond with koi in Kyoto, Japan. Photo by Janice Glime.

Sand is used in many of the gardens. It is always well kept, often raked with the ridges of raking forming various designs (Figure 10-Figure 12). Some of these simulate a lake with islands and mountains (Figure 10). In other cases, the mosses surround a gravel bed shaped to resemble a lake (Figure 11). The mosses are not arranged in rectangular plots so common to western gardens, but rather typically follow a circular theme. Species of *Polytrichum* (Figure 12) are often used for these islands to break up the bright appearance of the sand (Saito 1980).



Figure 10. Tofukuji Garden bordered with mosses. The raked sand and moss islands give the illusion of a lake with mountains. Photo from Wikimedia Commons.



Figure 11. Rosan-ji garden, Kyoto, Japan, showing gravel with islands of mosses. Photo from Wikimedia Commons.



Figure 12. Tofuku-ji hojyo, a sand garden surrounded with *Polytrichum*. Photo from Wikimedia Commons.

A path of stones may meander (Figure 13) through the gravel or across the moss bed and is often not straight or even direct. Even the straight paths give a sense of meander by mixing large and small stones (Figure 14) or making sure 4 corners never meet (Seike *et al.* 1980). Small stone or wooden bridges (Figure 15) may cross the gravel bed in somewhat larger courtyards, and generally a stone or iron lamp such as the one seen in Figure 16-Figure 17 provides the soft light of a candle or merely a point of interest. Other common objects in the moss and temple gardens are a small pagoda, often made of stone (Figure

18) or a basin for washing one's hands (Figure 19-Figure 20). A small garden, such as most courtyard gardens, will typically have a single plant or one of the above objects as its point of focus.



Figure 13. Stone path in moss garden. Photo by Szabolcs Arany, through Creative Commons.

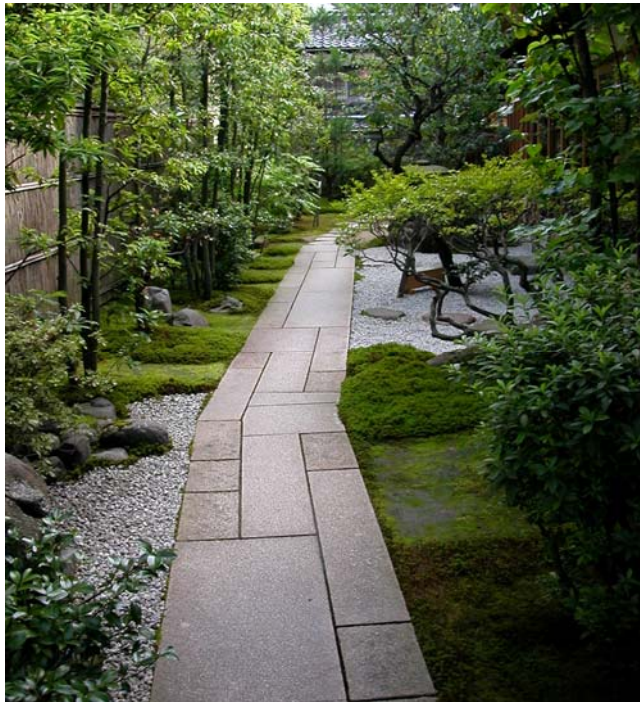


Figure 14. Kanazawa, Japan – Nagamachi samurai district, house garden walk, demonstrating a straight path with multiple sizes of stones, giving a sense of meandering. Photo courtesy of Elin LeClaire.



Figure 15. A rock bridge retains a natural look in this moss garden and pond at Ginkakuji, Kyoto, Japan. Photo by Janice Glime.



Figure 16. Shrine and pond with stone lamp (foreground), Kyoto, Japan. Photo by Janice Glime.



Figure 17. Nagoya Private Moss Garden with stone lantern as a point of focus. Photo by Janice Glime.



Figure 18. Kanazawa Kenroku-en Garden in Japan showing stone pagoda. Photo by Elin LeClaire.



Figure 20. Kenroku-en garden stone water basin in a moss garden in Japan. Note the natural appearance of the basin. It is likely that the leaf was added as a touch of nature and to add a spot of color. Photo from Wikimedia Commons.

Among the larger gardens, one may see, instead of mosses mimicking the mountains, that shrubs mimic the mosses (Figure 21). In these gardens, the shrubs are cut into rounded forms that look like moss-covered rocks, cascading down a hillside, and sometimes with a small stream or waterfall in their midst. Waterfalls are common in the larger gardens, but occasionally even in very small ones (Figure 22-Figure 24).



Figure 21. Saihouji-kokedera. In this moss garden, the shrubs are cut to look like moss cushions. Photo from Wikimedia Commons.



Figure 19. Kanazawa, Japan – Nagamachi samurai district, house garden with small basin for washing hands. Photo courtesy of Elin LeClaire.

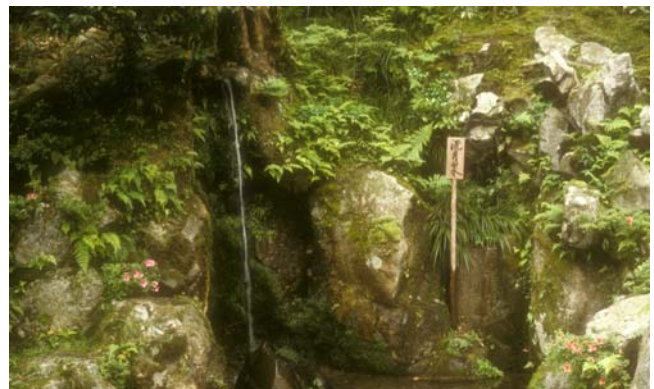


Figure 22. This small waterfall in Ginkakuji moss garden in Japan retains the natural look using rocks and ferns with the mosses. Photo by Janice Glime.



Figure 23. Nanzen-in – Nanzenji, Kyoto, Japan, showing a natural waterfall in a mossy part of this garden. Photo from Wikimedia Commons.



Figure 24. Even this tiny restaurant garden in Nagoya, Japan has a waterfall. This is a restful view outside your window while you eat. Photo by Janice Glime.

Many attractive moss gardens are seen in Kyoto, the ancient capital city of Japan, where the surrounding mountains ensure constant humidity, and prolonged summer rainy seasons favor growth and survival of the mosses. Perhaps the most popular Kokedera, or Moss Temple, is the Koinzan Saihoji Temple (Figure 21) located at the foot of Mt. Koinzan in the west of Kyoto City. There are 92 different species there, each with its own required environmental conditions (Figure 25).



Figure 25. Hill and pond garden in Koinzan Saihoji Temple garden in Kyoto, Japan, with *Polytrichum* in the foreground and several other bryophyte species. Photo by Janice Glime.

Types of Japanese Moss Gardens

Generally there are three types of Japanese moss gardens: the flat garden (Figure 26) "for contemplation and meditation," the Tea Ceremony garden (Figure 27-Figure 28) that must convey the feeling of simplicity and seclusion, and both the oldest and most widely appreciated – the hill and pond garden (Figure 29-Figure 31). A roofed courtyard or indoor garden may provide a tea table and cushions for a tea ceremony. The hill and pond gardens resemble the natural landscapes of Japan in simplified form (Avery 1966). They may have bridges, often not straight (Figure 32), forcing the visitor to walk slowly and enjoy the garden. The use of rocks to portray mountains or add a focus point (Figure 33), ponds as oceans or lakes (Figure 25), and bryophytes as the foliage are the essence of traditional Japanese gardens where flowers, *per se*, are of lesser importance; a green garden, unlike ephemeral flowers, symbolizes long life and offers a place for relaxation and contemplation. In sharp contrast to the myriad of colors and shapes in a traditional American or European garden, the moss garden allures with its subtle shades of green, accented here and there with a rock or group of rocks (Figure 34), a bamboo fountain (Figure 35), a lamp (Figure 36), or an occasional small flowering shrub (Figure 37).



Figure 26. Ryoanji Temple garden in Kyoto, Japan, representing the flat garden. Photo by Janice Glime.



Figure 29. Kanazawa Kenroku-en Garden in Japan, an example of a hill and pond garden. Note the lamp that adds a point of focus. Photo courtesy of Elin LeClaire.



Figure 27. Japanese Tea Garden in San Francisco, CA, USA. Photo by Redhairedflip, through Creative Commons.



Figure 30. Kyoto Nijo Castle, Shogun's palace garden, illustrating the hill and pond garden with mosses and stones. Photo by Elin LeClaire.



Figure 28. The same Japanese Tea Garden, San Francisco, CA, USA, as in Figure 27, but with the azaleas in full bloom. Photo by Caroline Culler, through Creative Commons.

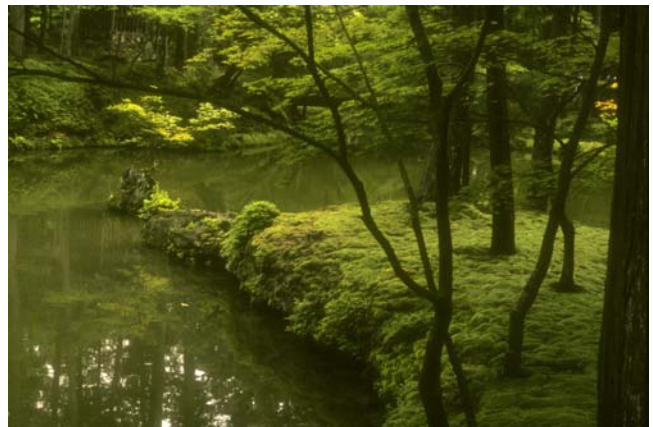


Figure 31. Kokedera Pond in Kyoto, Japan, an example of a hill and pond garden. Photo by Janice Glime.



Figure 32. Kanazawa Kenroku-en Garden in Japan, showing a meandering bridge that forces the visitor to slow down. Photo courtesy of Elin LeClaire.



Figure 33. Boulders add interest to this moss garden at the Saihoji Kokedera in Kyoto, Japan. Photo by Janice Glime.



Figure 34. Kyoto Nijo Castle garden with rocks, Shogun's residence. Photo by Elin LeClaire.



Figure 35. Bamboo fountain in moss garden, a point of interest and focus. Photo by Jeff Kramer, through Creative Commons.



Figure 36. Kanazawa - Nagamachi samurai district, house garden with lamp. Stone lamps are common in Japanese gardens. Photo by courtesy of Elin LeClaire.



Figure 37. Kokedera moss garden in Kyoto, Japan, with *Leucobryum* and two flowering shrubs as highlights and points of focus. Photo by Janice Glime.

Imagine yourself sitting alone in a Japanese spa perched near the top of a mountainside overlooking a green valley untouched by habitation. On every side of the valley are mountains and boulders – as far as you can see. All is peaceful and you are able to relax your eyes and your body. Thousands of Japanese seek just such retreats every year to take them away from the stresses of daily life. Among the most ancient uses of mosses that has persisted into modern life is the design of moss gardens to create that same feeling of distance, lack of commercial clutter, and tranquility of spirit. By using rocks and tiny plants such as mosses, the Japanese create in miniature those scenes that they crave in nature. Even in the space of a few feet in a dooryard or window garden in a city, they often create such an illusion of distant mountains, dry stream beds, and green forests (Figure 38). The Japanese Zen scholars have philosophical ideas about landscapes, and about simplicity and repose, which they try to express in their traditional gardens (Fletcher 1991). While the space in the gardens is usually small, they may try to create an atmosphere of being deep within the mountains and provide a feeling of tranquility. Japanese gardening is not a mere imitation of nature; perhaps "borrowed scenery" is a more appropriate description (Avery 1966) for the attempt to alleviate the drabness of city life. Contemporary Zen scholars contend that many such gardens represent the best in abstract art (Avery 1966).



Figure 38. This tiny moss garden with a waterfall can be seen through a guest window in a restaurant in Nagoya, Japan. *Platyhypnidium riparioides* is in the water and *Philonotis falcata* is at the edge. Photo by Janice Glime.

Even bowls (Figure 39) and other objects in the gardens are likely to be covered in mosses, softening the lines and giving a quiet, cool appearance.



Figure 39. This moss-bearing basin is in a city park in Nagoya, Japan. Photo by Janice Glime.

Dangers to Gardens

These ancient gardens suffer new dangers in our modern society. Kyoto is the city of moss gardens (Figure 40-Figure 56), especially temple gardens. But even restaurants and private residences share in the serenity with their own small gardens. Aside from the effects of trampling from the ever-increasing population of visitors, the fumes of cars and busses have taken their toll. The pollution from these visitor vehicles has forced the closing of Saihoji in Kyoto to the casual visitor, requiring reservations in advance and forcing visitors to park at the bottom of the hill and walk up to avoid further damage from air pollution.



Figure 40. This moss garden in Kyoto, Japan, has a single species to emphasize its tranquility. Photo by Janice Glime.



Figure 41. This pond in the moss garden at the Saihoji Kokedera (moss temple) in Kyoto, Japan, gives a natural look and one of distance. Photo by Janice Glime.



Figure 44. This Ginkakuji Temple (Silver Temple) overlooks moss gardens in Kyoto, Japan. Photo by Janice Glime.



Figure 42. This pond with a small island and surrounded with mosses at the Saihoji Kokedera in Kyoto, Japan, gives the illusion of a lake. Photo by Janice Glime.



Figure 45. A small river provides a natural setting in this moss garden at Ginkakuji in Kyoto, Japan. Photo by Janice Glime.



Figure 43. Several mosses provide subtle color differences in this moss garden at Saihoji Kokedera in Kyoto, Japan. Photo by Janice Glime.



Figure 46. Here sand forms a volcano (mid right) and mosses miniaturize the landscape at the Ginkakuji shrine in Kyoto, Japan. Photo by Janice Glime.



Figure 47. This path through the moss garden at Ginkakuji Temple in Kyoto, Japan, retains a natural appearance. Photo by Janice Glime.



Figure 48. This moss garden at Ginkakuji Temple in Kyoto, Japan, has depth provided by the pond. Photo by Janice Glime.



Figure 49. Sand is used for dry stream beds and unused paths in moss gardens such as this one at Ginkakuji Temple in Kyoto, Japan. Photo by Janice Glime.



Figure 50. This moss garden at Ginkakuji (Silver Temple) garden in Kyoto, Japan, maintains a natural look. Photo by Janice Glime.

Educational Gardens

One unusual feature at the Ginkakuji (Silver Temple) garden in Kyoto is that it attempts to teach the public about the mosses. In Japan, each species has a Japanese name, and like birds and flowering plants, mosses are known by these names. However, the bryologists know both the scientific names and Japanese names of the mosses. The displays of mosses provide an explanation of their utility to the gardens, showing the most important species (Figure 51, Figure 52). The "interrupter" mosses are "undesirable" mosses that must be weeded out (Figure 53). Among these are non-weedy things, but nevertheless undesirable ones, often for aesthetic reasons. To our surprise, this included *Andreaea* (Figure 54) because of its nearly black (and undesirable) color. Heinjo During, with the help of his students, attempted to interpret the Japanese names into their proper Latin ones, giving us a list of important temple garden species (Figure 55).



Figure 51. This educational display is labelled VIP mosses. Each is labelled with its Japanese name. These VIP mosses are among the most important ones in the moss garden at the Ginkakuji Temple in Kyoto. Photo courtesy of Onno Muller.



Figure 52. These mosses, also on educational display at the Ginkakuji Temple, are normal inhabitants of the Ginkakuji garden. Photo courtesy of Onno Muller.



Figure 53. This educational display is labelled "the Interrupter Mosses." These are weedy mosses that must be pulled from the gardens to permit the others to survive. Apparently they "interrupt" the tranquility. Photo courtesy of Onno Muller.



Figure 54. *Andreaea rupestris rupestris*. *Andreaea rupestris* var. *fauriei* is among the mosses considered undesirable in the Ginkakuji (Silver Temple) garden in Kyoto because of its black color. Photo by Des Callaghan, with permission.

【銀閣寺の大切な苔】 Very Important Mosses

オオスギゴケ、	<i>Polytrichum formosum</i>
コスギゴケ、	<i>Pogonatum inflexum</i>
スギゴケ、	<i>Polytrichum juniperinum</i>
ウマスギゴケ、	<i>Polytrichum commune</i>
ミヤマスギゴケ	<i>Polytrichastrum alpinum</i>
ホウライスギゴケ	<i>Pogonatum cirratum</i>
ヒロードゴケ	??
アラハシラガゴケ	<i>Leucobryum bowringii</i>
チャボスギゴケ、	<i>Pogonatum otaruense</i>
イトラッキョウゴケ、	<i>Anoetangium thomsonii</i>
ヤマゴケ、	<i>Oreas martiana</i>
カモジゴケ、	<i>Dicranum scoparium</i>
イワダレゴケ、	<i>Hylocomium splendens</i>
コキンシゴケ、	??
ネジクチゴケ、	<i>Barbula unguiculata</i>
ホソバシラガゴケ、	??
ヒノキゴケ、	<i>Rhizogonium dozyanum</i>
ヒロハヒノキゴケ、	<i>Pyrrhobryum spiniforme</i>
	var. <i>budakense</i>
イノウエネジクチゴケ、	??
コックシサワゴケ、	<i>Philonotis thwaitesii</i>
アラハシラガゴケ、	<i>Leucobryum bowringii</i>
オオホウオウゴケ、	??
ハマキゴケ、	??
キャラハラツコゴケ。	<i>Taxiphyllum taxirameum?</i>

【ちょっと邪魔な苔】 The inhabitants of Ginkaku-ji

ヒロハツヤゴケ、	<i>Entodon challengerii</i>
タチハイゴケ、	<i>Pleurozium schreberi</i>
ハイゴケ、	<i>Hypnum plumaeforme</i>
タニゴケ、	??
コツボゴケ、	<i>Plagiomnium acutum</i>
コバノチョウチンゴケ、	<i>Trachycystis microphylla</i>
ハネヒツジゴケ、	<i>Brachythecium plumosum</i>
オオサナダゴケ、	<i>Plagiothecium neckeroideum</i>
サナダゴケ、	??
ススキゴケ、	<i>Dicranella heteromalla</i>
エダツヤゴケ、	<i>Entodon flavescens</i>
ミズシダゴケ。	??

【とても邪魔な苔】 Moss the Interrupter

ゼニゴケ、	<i>Marchantia polymorpha</i>
ヒメジャゴケ、	<i>Conocephalum japonicum</i>
ジャゴケ、	<i>Conocephalum conicum</i>
ホソバミズゼニゴケ、	<i>Pellia endiviifolia</i>
アズマゼニゴケ、	<i>Wiesnerella denudata</i>
ミズゼニゴケ、	<i>Pellia epiphylla</i>
コバノエゾシノブゴケ、	<i>Thuidium recognitum</i>
	var. <i>delicatum</i>
アオシノブゴケ、	<i>Thuidium pristocalyx</i>
トヤマシノブゴケ、	<i>Thuidium kanedae</i>
タカネカモジゴケ、	<i>Dicranum viride</i>
	var. <i>hakkodense</i>
クロゴケ、	<i>Andreaea rupestris</i>
	var. <i>fauriei</i>
センニチゴケ。??	

Figure 55. Japanese moss names and Latin names for those in the educational collection in Kyoto. From Heinjo During.



Figure 56. This moss is growing on the tile of a temple garden roof in Kyoto, Japan. Photo by Janice Glime.

Variations

We must not forget that the Japanese are also creative. While they appreciate the calm of a garden, they do not restrict themselves to the purity of the three garden types mentioned above. The following images illustrate some of that diversity (Figure 57-Figure 63).



Figure 57. Tōfuku-ji, Kyoto, Japan. This formal pattern looks like a mix of western and Japanese design. Photo from Wikimedia Commons.



Figure 58. Here the meandering path takes on a different form in the Rhododendron garden with mosses playing a minor role. Photo by Monty Monsees, through Creative Commons.



Figure 59. Ankokuji garden in Hiroshima, Japan, giving a natural appearance but with rocks providing the major feature. Photo from Wikimedia Commons.



Figure 60. Kanazawa Kenroku-en Garden showing the famous koto-fret stone lantern. The bamboo fence is also a common feature in Japanese gardens. Photo courtesy of Elin LeClaire.



Figure 61. Courtyard garden of a former geisha house in Kanazawa, Ishikawa, Japan – straw protects trees from snow. But even that protection is artistic, natural, and restful. Photo from Wikimedia Commons.



Figure 62. Ginkakuji Moss Garden pool in Kyoto, Japan, with coins, a practice that may have originated in western countries. Photo by Janice Glime.



Figure 63. The mosses in this Japanese garden near Columbus, Ohio, USA, do not quite reach the restful landscape achieved in most of the Japanese gardens. This may be partly due to the lack of a rainy season and the land-bound location. Photo by Janice Glime.

Charcoal Gardens

Nancy Church provided me with images of the charcoal gardens (Figure 64-Figure 66) in which moss gardeners used charcoal, providing highlights. The small black pieces with lines are charcoal, a feature that Nancy considered to be beautiful and amazing.



Figure 64. Japanese charcoal and moss garden. Photo by Amy Laudenslager through Nancy Church.

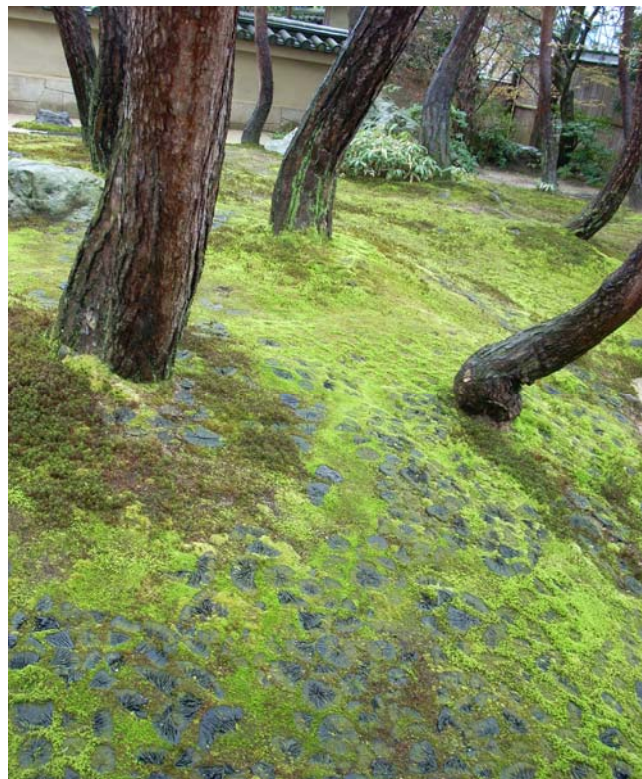


Figure 65. Japanese charcoal and moss garden. Photo by Amy Laudenslager, through Nancy Church.

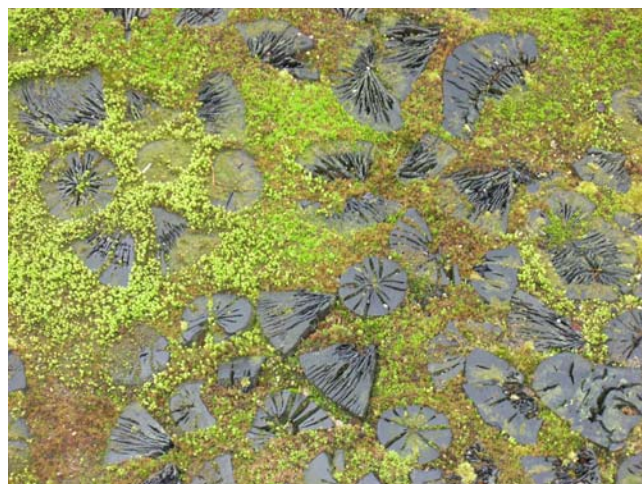


Figure 66. Japanese charcoal and moss gardens. Photo by Amy Laudenslager, through Nancy Church.

Dominant Species

Although many species are used, a few dominate the gardens, especially the private gardens. One of the most common is *Polytrichum* (Figure 67-Figure 71). This is most likely because it does well in the conditions of the garden and is easier to transplant than most (personal experience). *Leucobryum* (Figure 72-Figure 74) is used frequently, despite its narrower requirements (it seems to be a problem to cultivate in the USA according to my friends and my own experience). Perhaps the Japanese species are easier to grow than ours. But its endearing quality is its beautiful, pale cushions. It creates a restful landscape.



Figure 67. Ginkakuji Moss Garden, Kyoto, with a carpet of *Polytrichum*. Photo by Janice Glime.



Figure 70. Kanazawa Kenroku-en Garden in Japan, with a *Polytrichum* lawn and stone lantern. Photo courtesy of Elin LeClaire.



Figure 68. Kanazawa Kenroku-en Garden in Japan with lawn of *Polytrichum*. Photo courtesy of Elin LeClaire.



Figure 71. *Polytrichum commune* in a small garden at the entrance to the Japanese Cake Shop in Hiroshima, Japan. Photo courtesy of Hironori Deguchi.



Figure 69. Kanazawa Kenroku-en Garden with *Polytrichaceae*. Photo courtesy of Elin LeClaire.



Figure 72. *Leucobryum* spills down a slope in a moss garden at the Saihoji Kokedera (moss temple) in Kyoto, Japan. Photo by Janice Glime.



Figure 73. *Leucobryum juniperoideum* at moss temple in Kyoto, Japan. Photo courtesy of Zen Iwatsuki.



Figure 74. *Leucobryum* in a temple garden in Japan. Photo by Janice Glime.

At a plantation preparing for the sale of bryophytes for gardens, the thallose liverwort *Riccia* (Figure 75) was cultured. It has the advantage of being able to withstand dry conditions for long periods, then wake up during the rainy season. But I must admit to finding none of it in the gardens I saw. It does not give the restful look of the two mosses mentioned above.

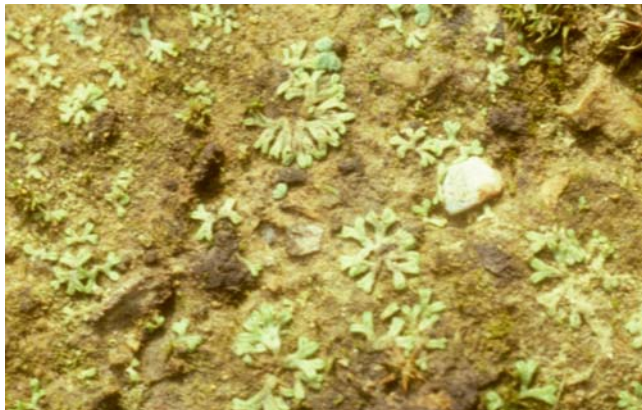


Figure 75. Nagoya bryophyte plantation with *Riccia*, a thallose liverwort that is able to dry up and then rejuvenate during the rainy season. Photo by Janice Glime.

Summary

Moss gardens are known for their serenity, emphasizing simple shades of green with only occasional color from shrubs or other flowers. Mosses are used to miniaturize the landscape, giving the feeling of distance. They have been a part of Japanese tradition since the feudal era.

There are three basic types of Japanese moss gardens: flat gardens, Tea Ceremony gardens, and pool and mountain gardens. In addition, sand gardens are often combined with moss gardens, often simulating lakes or streams. A number of variants exist, including the charcoal garden.

Even private homes, restaurants, and other shopkeepers maintain small moss gardens, especially where they can be viewed from within the building. The greatest number of moss gardens is in the city of Kyoto. The primary mosses used are species of *Polytrichum* and *Leucobryum*, but some gardens have nearly 100 species.

Acknowledgments

Heinjo During kindly sent me the pictures and gained the permission for me to use the educational pictures taken by his student, Onno Muller, illustrating the educational displays at the gardens at Ginkakuji, Kyoto, Japan. He and his students translated the Japanese names into the Latin names.

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