

因时而变的植物景观

Plant Landscape Changing over Time

采访 Interviewed by / 涂先明 Xianming TU, 李霞 Xia LI
整理 Edited by / 涂先明 Xianming TU
翻译 Translated by / 蔡金栋 Jindong CAI



董丽 Li DONG

北京林业大学教授、博士生导师
Professor and Doctorial Supervisor of Beijing Forestry University

相对于静止的建筑而言，园林景观会随着时间的流逝而发生改变，您认为园林景观中的哪些方面能够体现出时间维度的变化？

董丽（以下简称董）：毋庸置疑，园林景观会随着时间的变化而变化。一方面，构成园林景观的元素自身会随时间而变化，例如，构成水景的水会在冬天结冰，也会因为天气变暖而消融。另一方面，自然界的各种天气现象的变化也是园林景观的一部分，例如，正因为有日光月影、风雨交错，才有“明月松间照”、“疏影横斜”以及“雨打芭蕉”的景致。

当然，对于设计师可控的元素而言，植物的变化可以说是最为丰富和显著的。在一日之中，有些植物就会体现出“时间特性”，如“昙花一现”（昙花 *Epiphyllum oxypetalum*）、“朝开暮落”（木槿 *Hibiscus syriacus*）、“夜落金钱”（午时花 *Pentapetes phoenicea*）等就是典型的例子。还有些花会在不同的气象条件下开放，比如半支莲（*Portulaca grandiflora*）会在晴天开放，阴天闭合。

相对而言，大家对植物的四季变化更为熟悉。通常“季相”——园林景观四季的变化——主要是指植物景观的变化。我国广大的北方地区都位于温带气候带，这一气候带的典型特征就是四季分

采访日期 Interviewed Date | 中图分类号 / TU986.2
2014-01-21 | 文献标识码 / C

摘要 / 一日之中、一年之中、植物个体的生命周期中，以及植物群落的演替过程中，植物景观都将呈现出丰富的变化。这种变化不仅体现在植物自身，也体现在植物所构成的空间特征上。本文概述了植物景观的变化，提出了结合这些变化的种植设计手法，并指出了当今社会对于植物景观的错误认识。

关键词 / 植物；群落；变化；季节

Abstract / Within a day or a year, during the life cycle of individual plants and the evolving process of the whole plant community, temporal changes of plant landscape have been taking place. Such changes are reflected not only in the plants per se, but also the spatial characteristics formed by the plants. This interview concentrates on the changes of plant landscape, and introduces planting design guidelines according to these changes, addressing the wrong understanding of plant landscape.

Key words / Plant; Plant Community; Change; Season

明——春天繁花似锦、夏天绿荫葱葱、秋天层林尽染（图1），冬天则较为萧瑟或雄浑苍凉。

植物个体在整个生长过程中也能够体现出生命的变化。例如，油松（*Pinus tabuliformis*）幼年时期的株型比较丰满，而老年时的姿态则很苍劲。而且，与其他生物类型一样，植物也是有特定寿命的，有些植物的寿命较短，可能几十年生命就终结了，例如大部分的杨树种类；有些植物则可以存活几千年，例如松柏、银杏（*Ginkgo biloba*）等。由多

1. 温带地区绚烂的秋景
1. The colorful autumnal scenery in temperate regions



Unlike static, built architecture, gardens change with time. What aspects of the garden do you think best reflect the changes in time?

Li DONG (DONG hereafter): Undoubtedly gardens change with time. On the one hand, the elements that form the gardens can change with time — water freezes and then melts. On the other hand, weather is also part of the garden landscape. For example, sun, shade, wind, and rain make possible the moonlight in the pine trees, the scattering and crisscrossing shadows, and rain falling on leaves.

Of course, among the factors controllable by designers, plants have the richest and the most obvious changes. Some plants' characters could express the time of day, such as the short-lived epiphyllum (*Epiphyllum oxypetalum*), the hibiscus (*Hibiscus syriacus*) that blooms at dawn and falls at dusk, and the noon flower (*Pentapetes phoenicea*) that just blooms at noon. Some flowers bloom only in special meteorological conditions. For example, moss rose (*Portulaca grandiflora*) comes out in sunny days and closes when it is overcast.

We are more familiar with seasonal changes in plants. “Seasonal aspect” — that refers to the seasonal changes of landscape — mainly refer to the changes of plants. North China is mostly within a temperate zone characterized by four distinct seasons — the flowering spring, the green summer, the yellow autumn (Fig. 1), and the bleak winter.

The changes of life can be seen in the cycle of individual plants. For example, Chinese pines (*Pinus tabuliformis*) are plump when they are young, but vigorous when they are old. Plants, like other organisms, have finite life spans. Some can be as short as several decades, such as polar trees, while others can be thousands of years old, such as pine, cypress and ginkgo (*Ginkgo biloba*). Because each specific species has its own life cycle, as time goes by, the appearance of the community will change. As time

passes, plant species replace other plant species within ecological communities, leading to over all changes in the landscape. In this sense, within a day or a year, during the life cycle of individual plants and the ecological processes of entire plant communities bring rich changes to landscapes. Such changes are reflected not only in the plants per se, but also the spatial characteristics formed by the plant's growth.

In addition to the changes of plants per se, habitat, which is formed mainly by plants, bring changes of other organisms throughout the seasons. In spring when a variety of flowers are in bloom, the arrival of bees and butterflies creates beautiful scenery. At the same time, their fruits and other organs of plants provide food for many birds. Even in the bleak winter, we also could meet the moving scene of life. When winter comes, I like to go out and find bird's nests in the trees. At that time, when the trees are bare, the nests can be clearly seen. When I find a nest, I find the landscape of birds hovering and chirping above the nests (Fig. 2).

Since plant communities experience some level of constant succession, how can landscape architects begin to consider these periods of change?

DONG: For most contemporary designs, the plant communities designed by landscape architects are “climax community” in specific conditions of sites — because what the landscape designers are seeking for are landscapes that have the best effects and last for the longest period. In reality, not all the plants used are in mature state; most plants are still saplings and seedlings from the nursery beds. As a result, while designing, we need to understand how these saplings and seedlings will grow up over time, and ensure enough room for their growth. At the same time, plants grow at different speeds. If there are several different types of heliophilous plants in a community, one species grows at a faster rate than others, the faster species will block sunlight from reaching slower growing plants, leading

种不同的植物种类所构成的群落，在群落演替的过程中，因其中各个种类个体生命周期的不同，群落外貌随着时间的推进必然会发生变化。此外，由于一些物种的形态变化会带来群落内部生态环境的变化，从而导致一些物种可能不再适合生存而被其他物种所替代，最终导致景观的变化。所以，一日之中、一年之中、植物个体的生命周期中，以及植物群落的演替过程中，植物景观都将呈现出丰富的变化。这种变化不仅体现在植物自身，也体现在植物所构成的空间特征上。

除了植物自身发生的变化外，在以植物为主要元素所构成的栖息地中，不同时节会引发其他生物的动态变化，例如春天繁花似锦时会出现蜂飞蝶舞的美景，而植物的果实等器官是许多鸟类的食源。即使是到了大家认为比较萧瑟的冬天，也能在植物周围发现生命的感动。每到冬天，我最喜欢去寻找树上的鸟巢，因为此时树叶已经掉落，鸟巢全都清晰地呈现出来。当你发现一个鸟巢的时候，就常常能在它的周围看到鸟在盘旋鸣叫（图2）。

植物群落处在不停的动态演替之中，设计师应该如何考虑各个阶段的不同效果？

董：从理论上来说，在当今大部分的设计中，经过设计的植物景观是在特定的立地条件下的“顶级群落”——因为设计师总是追求建立一个效果最佳、持续时间最久的稳定的景观。而现实中，可供设计师使用的植物材料并非都达到了其成年状态，大部分可供使用的植物都是来自于苗圃的小苗。设计师在设计时应预见到随着时间的流逝，这些小苗会逐渐长大，因此，要为它们留出足够的生长空间。同时要预想到不同的植物，生长速度不同，从而会造成小环境的改变——例如在一个拥有几种位于上层的阳性植物的群落中，因为其中一种植物的生长速度较其他几种更快，遮挡住了其他喜阳种类生长所需的阳光，后者则会因为生态条件的改变而生长不良甚至慢慢死去，那么整个群落的效果就与设计预期产生了差异。所以，设计师一定要了解每一种植物材料个体在生长发育过程中的特点，从而确保所进行的配植设计最为合理。

您认为应该怎样协调社会上对植物材料快速成景的期望与植物具有成景周期这两者之间的矛盾？

董：人们总是希望能在种植之初就呈现出最佳的景观效果，这正是造成“大树移植”盛行的主要原因。虽然其目的似乎可以理解，但这种做法仍然是错误的。首先，这种移植本身就是对植物原生地的生态环境的一种极大破坏；其次，由于这些从异地移植而来的大树，没有接受过苗木培育过程中的很多技术措施，移植后成活率往往并不高，而且对其潜在寿命也必然存在不利影响。很多的时候，我们痛心地看着那些新建绿地中的移植大树还未绽放生命的华章就早早死掉，或者需要很长的养护时间才能恢复其应有的生命状态。这是对资源的一种极大浪费。改革开放以来，随着城市建设的快速发展，开发商和政府官员都希望能看到立竿见影的绿化效果，以作为商业推销的噱头或晋升的业绩。这种不计经济成本、忽略生态成本的做法正是社会浮躁和追求短期效应的一个缩影，现在是时候改变这种风气了。我们应该清醒地意识到：植物的生长需要时间，植物景观的形成需要时间。

虽然在建植初期无法达到最佳的效果，但我们可以采取一些种植手法使之相对较佳。例如，可以在需要大树的地方，多种植几棵小树，随着这些小树的生长，再逐渐间移掉一些。这种做法要视项目的性质、场地特征及立地条件等而定，并不等同于当下许多地方为追求立显的效果而采用的密植手法。另外，速生树种生长较快，但其寿命也较短，



2

to even slower growth or death. To guarantee the best combination of plants, landscape architects have to know the growth characteristics of each plant selected.

How can we balance the need for instant landscapes and the time needed for plants to grow?

DONG: People always hope for the best results from the very beginning, and this is why transplanting big trees is so popular. The act of transplanting can cause serious damage to the original living environment of the tree. And overall survival rate of transplanted trees is very low. The process almost always affects the tree's overall lifespan. More often than not, the transplanted trees die, or we need take a long time to maintain these trees. Generally, it is a huge waste of resources. Since the beginning of Chinese economic reform and opening-up, urban development has been at a constant, high speed in China. Real estate developers and government officials hope for instant landscapes. In many cases, the pursuit of a quick turn around disregards economic and ecological costs in favor of instant and short-term landscapes. We need to change this trend by being completely aware of the time it takes for plants to grow and landscapes to form.

Although it is not always possible to achieve the best results immediately after the trees are planted, we can adopt some techniques to improve this process. For example, we can plant more small trees where big trees are needed. As they grow, some can be removed to allow for proper spacing. Of course, this method depends on the nature of the project and the characteristics of the field and the site conditions. It is a different attitude than the currently popular close plantings to achieve photographic, short-term results. Another technique is to plant both fast and slow growing trees. Fast-growing trees can create rich landscapes in a relatively short time. However, generally, the faster a tree grows, the shorter its lifetime. On the flip side, by the time the fast growing



3

2. 冬季白杨林纯净之美
3. 经越冬防护过的大叶黄杨失去了其原有的景观效果。
2. The pure landscape of aspen forest in winter
3. Through the winter protection, *Euonymus japonicus* hedges have a very decline appearance.

trees begin to die, the slow growing trees may have reached a stable state. Finally, we need to put more energy into cultivating big saplings. With improved cultivating measures, they can be better adapted for new environments and hopefully survive for longer periods. We can rename these trees “big samplings”. Combined with container nurseries, new landscape vegetation does not have to be restricted by growing seasons, a practice that will reduce cost and loss during transplanting.

You mentioned the winter in northern China is bleak. Large research funds and human resources have been invested into the introduction of southern plants to north — for example, the introduction of broad-leaved evergreens to Beijing. What is your opinion on this?

DONG: Bleak is a negative word, but a bleak landscape is characteristic of winter in a northern zone. I do not think it is a good idea to introduce a lot of evergreen broad-leaf plants from the southern area to the north; they are specially not appropriate to be used largely in

我们可以利用这一特点，采用速生树种与慢生树种合理搭配的方式：速生树种能在较短的时间内形成景观效果，当速生树种逐渐死去的时候，慢生树种也基本达到了较为稳定的状态，此时，就能形成较为稳定的景观效果。此外，我们的苗木生产也应培养较大规格的苗木。这些苗木经过相应的栽培措施，具有更好的适应性、更易成活，可称之为“大苗”，但并非“大树”。如果这些苗木在培育过程中结合容器育苗的手段，可以使施工不受季节的限制，则可进一步减少反季节移植大树所带来的成本及损失。

您提到我国北方的冬天比较萧瑟，为了改变这样的景象，大量的科研资金和精力被投入到“南植北引”的引种驯化中，例如北京引种了很多阔叶常绿的树种。您是如何看待这些举措的呢？

董：“萧瑟”听上去似乎是一个比较消极的词，但这正是温带地区冬季的一种景观特色。我不赞成在北方地区大量引种常绿阔叶植物，更不推荐在公共绿地中不考虑气候条件地大量应用这些植物。在很多北方城市的冬季，我们常常能看到街头那些边缘物种，如大叶黄杨 (*Euonymus japonicus*)、小叶黄杨 (*Buxus microphylla*)、金叶女贞 (*Ligustrum × vicaryi*) 等被保温障包裹着。我曾经询问过一些养护工人，被告知这些防护材料一般在使用一次后，就被当做垃圾丢弃了，并没有得到回收利用。大规模防护越冬带来的人力物力的投入，是对资源的浪费、对环境的污染。而且这些植物被包裹着，根本发挥不了任何生态效益，视觉效果也并不佳 (图 3)，其有何用？

常绿阔叶植物的北引曾经受到“气候在变暖”这一论断的支撑。但当前全球气候变暖并没有表现为所有地方都在稳定地变暖。最近我们经历了越来越多的不可预测的局地气候灾害，比如前不久发生在我国云南等地的低温灾害，不仅导致当地大面积花卉生产受损，也致使大量绿化植物受害。面对这种局地气候灾害，本土物种有着更强的适应性。当然，城市中也存在一些气候条件较好的小环境，可以尝试使用一些边缘物种，以提升多样性，但



万万不可忘了其前提条件。

种植黄杨之类比较密集的常绿灌木的原因，除了可以为冬季增绿以外，还有一个原因是，如果栽植落叶灌木及宿根草本植物，在冬季落叶或枯萎后，地表容易裸露。我们的行业应该去探索解决冬季地面裸露的一些技术途径，例如能否开发一些农林废弃物材料来覆盖地表？此外，适量应用该气候带中的常绿针叶树是北方传统园林的重要造景手段，今天我们同样可以采用这样的手法。

您认为北方冬季景观自身有哪些可以挖掘的特点？

董：其实，我并不觉得北方的冬季很单调。北方冬季寒冷，叶子落光了会有更加充足的阳光，这正符合这个地域人们的生活需求。而且，只有在冬季，当叶子全部掉落以后，植物特定的姿态、枝干的色彩及质感等才能够完全暴露在人们眼前，所以并不能说冬季无景可赏。无论是高大洁白的毛白杨 (*Populus tomentosa*) 树干和枝桠上的鸟巢 (图 2)，龙爪槐 (*Sophora japonica* ‘Pendula’)、龙桑 (*Morus alba* ‘Tortuosa’) 奇异的枝条形态，红瑞木 (*Cornus alba*, 图 4)、棣棠 (*Kerria japonica*) 等鲜艳的枝条色彩，还是宿存在枝头的金银木 (*Lonicera maackii*) 的果实、随风摇曳的观赏草的花果序 (图 5)，甚至冰封在水池中的残荷，都充满了无穷的韵味。设计师应该以各种途径来引导公众欣赏这种特有的季节之美。LAF

the public green spaces without considering the cold climate. In many northern cities, we often see trees, such as *Euonymus japonicus*, *Buxus microphylla*, and *Ligustrum × vicaryi*, covered in cloth during the winter. I once asked some maintenance workers about this practice, and learned these protective materials are usually thrown away after one use, rather than being recycled. This investment of labor and materials is a waste of economic resources, as well as a source of environmental pollution. When shrouded, these plants do not contribute ecologically and their visual appearance is undesirable (Fig. 3). What is the point?

The introduction of evergreen broad-leaved plants to the north was once supported by the onset of global warming. However, as global warming does not mean a consistence and steady warming trend for everywhere, what we can expect are more and more unpredictable local climatic disasters. For example, the low temperature disaster in China’s Yunnan Province not only caused damages to local flower production, but also adversely affected a large amount of local vegetation. When facing unpredictable local natural disasters, native species are usually better adapted to local conditions. Of course, in small urban environments with good site conditions and mild microclimates, species diversity is good, especially for creating richly designed landscapes. However, the found site conditions should not be forgotten.

Dense shrubs, such as boxwood, are planted not only because they provide a green tint during winter, but because until deciduous shrubs or perennial herbs, they do not expose the bare earth surface. Our industry needs to find a technical way to address the aesthetics of bare earth during the winter. For example, can we develop new materials, perhaps made of agricultural or forestry waste, to cover the ground? Besides, it is an important planting method in traditional gardens in the north to use zonal conifers, and today we can also use these plants.

What planting methods do you think should be adopted for winter landscapes in northern climates?

DONG: I do not think winter in the north is monotonous. Yes, it is cold, but it is only after trees lose their leaves that we receive more sufficient winter sunlight, which is necessary to fulfill local social needs. Only in winter, after the leaves have fallen can the branching structure be fully understood, as well as the colors and texture of their bark. It is not right to say that there is no vegetation to be enjoyed in the winter. Charm is found in the tall, white trunks of polar trees (*Populus tomentosa*), bird nests in branches (Fig. 2), the bizarre twigs of Chinese pagoda tree (*Sophora japonica* ‘Pendula’), the bright colors of the red-twig dogwood (*Cornus alba*, Fig. 4) and the Japanese rose (*Kerria japonica*), the remaining fruit of the Amur honeysuckle (*Lonicera maackii*), the inflorescence and infructescence (Fig. 5) swinging in the wind, and the frozen lotuses on the water. Landscape architects need to design for all season and guide the public through the vegetative beauty offered throughout the year. LAF

4. 冬季红瑞木的鲜艳枝条
5. 冬季的芦苇荡仍然是野鸭的乐园。
4. The bright twigs of *Cornus alba* in winter
5. In winter, reed marsh is the paradise for wild ducks.

