2015

大不列颠植物园一瞥

许炳强

华南植物园

2015-10-08

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2015-10-01

目录

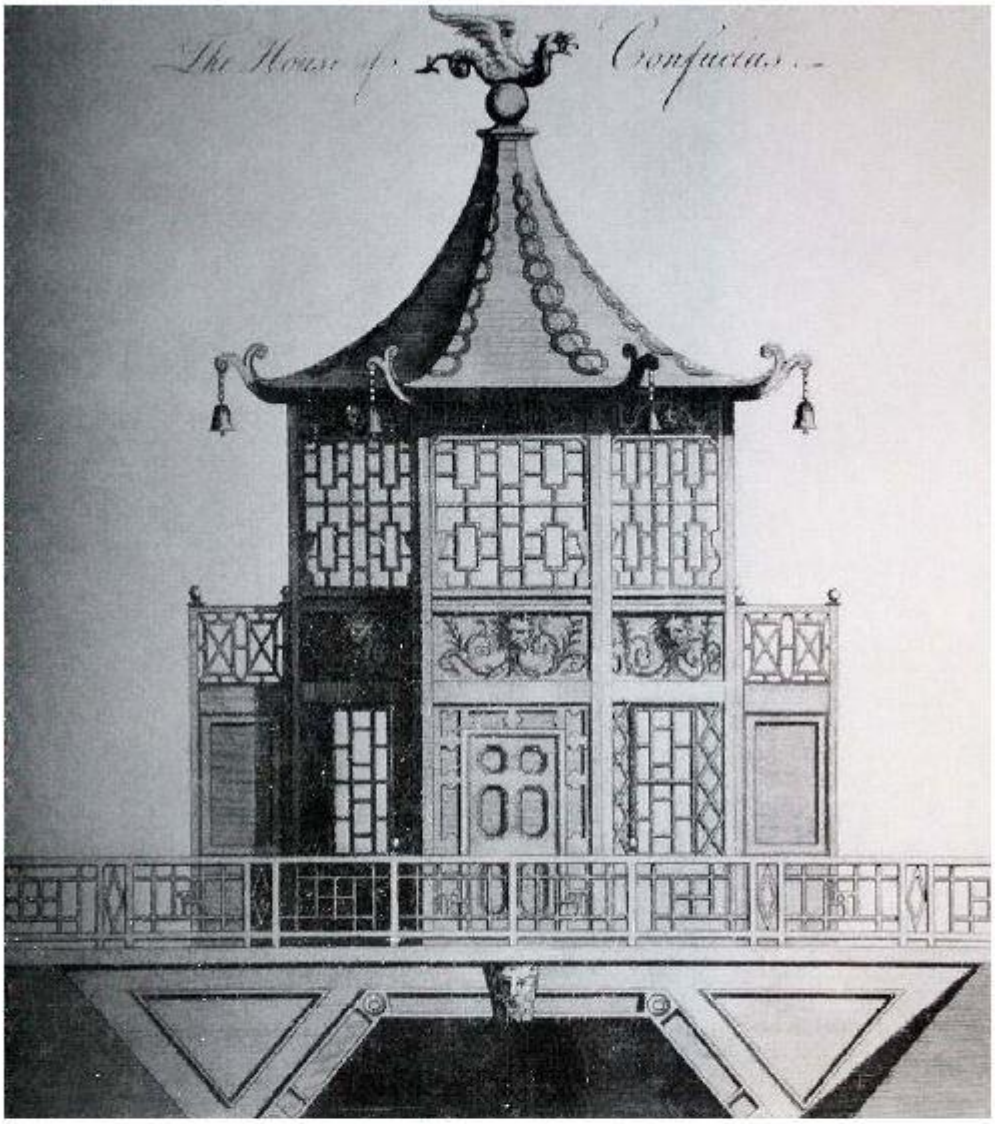
一 前言

19 世纪初，由于工业革命的完成以及一系列军事上的胜利，英国迅速发展成为世界头号资本主义强国。政治和军事的强大，保障了国内经济和文化的发展，兴建别墅和园林也成为一时风尚，这促使英国在 19 世纪成为西方园林艺术的引领者。

1804 年英国皇家园艺学会在伦敦成立，并派遣人员到世界各地搜集植物品种。随着植物品种的增加和园艺技术的进步，许多供园艺爱好者阅读的杂志也纷纷发行，这些都大大激发了大众对植物和园艺的热情，使园艺活动成为当时社会流行的一种休闲方式。人们投入大量精力学习植物栽培和养护的知识，促使园林植物的种植手法发生了巨大的改变。至此，英国成为西方园林艺术的引领者，成为世界园林园艺的楷模。

中国有着 5 千年的文化，中国的园林给世界园林有着深刻的影响，1761 年在英国邱园建立的中国塔（图 1）和孔庙（House of Confucius)（图 2）正是当年英国风靡一时的追求中国庭园趣味的历史写照。至今，中国塔仍然是邱园中最引人注目的景点之一，可惜的是，孔庙、清真寺等均已不复存在了。

图 1



钱伯斯的丘园中的孔庙设计图

Chambers's design of House of Confucius in Kew

图片来源：The English Garden

图 2

中国园林虽然对西方乃至世界园林产生过深远的影响，但到了近代，由于历史原因，中国的园林园艺和西方部分国家存在一定的差距。英国现代园林园艺对我国园林园艺的发展有着十分重要的启发意义。

为了提升整个中国植物园园林园艺管理水平，中国植物园联盟实施了一系列的项目来达到提高整体水平，如植物分类培训项目，园林园艺培训项目，交换学习等等。

中国植物园联盟建设项目通过实施“植物园人才培养计划”，对各植物园选择性的资助部分员工赴英国进修。2015 年度，中国植物园联盟通过和班戈大学合作，选派 4 名来自不同植物园的员工由联盟及选派单位共同资助赴英国爱丁堡植物园等地进行考察和学习。

本人有幸成为中国植物园联盟 2015 年度选派员工，通过 3 个月的学习，本人对英国植物园园林园艺及景观维护有了深刻的认识。

二 行程

本次赴英国进行园林园艺培训学习的时间是从2015年5月20日开始，至8月20日结束，共93天。

2015.05.22：伦敦城市园林园艺景观

2015.05.23：伦敦海德公园

2015.05.24：伦敦城市园林园艺景观

2015.05.25：切尔西药用植物园

2015.05.26：卫斯理植物园

2015.05.27：皇家植物园邱园

2015.05.28：剑桥大学植物园

2015.05.30：爱丁堡园林博览会

2015.06.01-09：爱丁堡植物园

2015.06.10-11：爱丁堡植物园娄根（Logan）分园

2015.06-12-07.16：爱丁堡植物园

2015.07.17：爱丁堡植物园道克（Dawyck）分园

2015.07.18-08.19：爱丁堡植物园

三 伦敦城市园林

由于伦敦纬度位置较北，冬季时间较长，且白天时间较短，因此取暖和照明是该城市规划设计及园林园艺需要考虑的首要问题。在居民区，为了获得更多的阳光，很多窗户都突出墙外，很多街道都没有种行道树，或者有行道树的都限制行道树的高度，或者大树零星种植。另一方面，在街区草本及小灌木居多，高大乔木也很常见，大乔木根部为了不裸露泥土，树兜之上也常精致地种上草本及常修剪的矮灌木。


草本虎耳草科植物、牻牛儿苗科、毛茛科植物；藤蔓、灌木植物较多，如月季、女贞、八仙花、薰衣草等，也是伦敦城市园林及家庭庭院喜欢栽种的植物。




另外，值得一提的是伦敦的自然博物馆专门开辟了一片区域展示植物，模拟野外自然植物景观，给这一高度现代化城市增加了无限野趣。

四 海德公园

海德公园（HYDE PARK）是伦敦最知名的公园。 海德公园是英国最大的皇家公园。位于伦敦市中心的威斯敏斯特教堂 (Westminster Abbey，即西敏寺)地区，占地 360 多英亩，原属威斯敏斯特教堂产业。

海德公园是伦敦的绿肺，类似的公园还有很多。是人们平常休憩、锻炼的好去处。走在公园里，到处都是鸟语花香，绿树成荫，不时有跑步锻炼的人们进入你的眼帘，使人觉得生活充满着无限阳光。

五 切尔西药用植物园

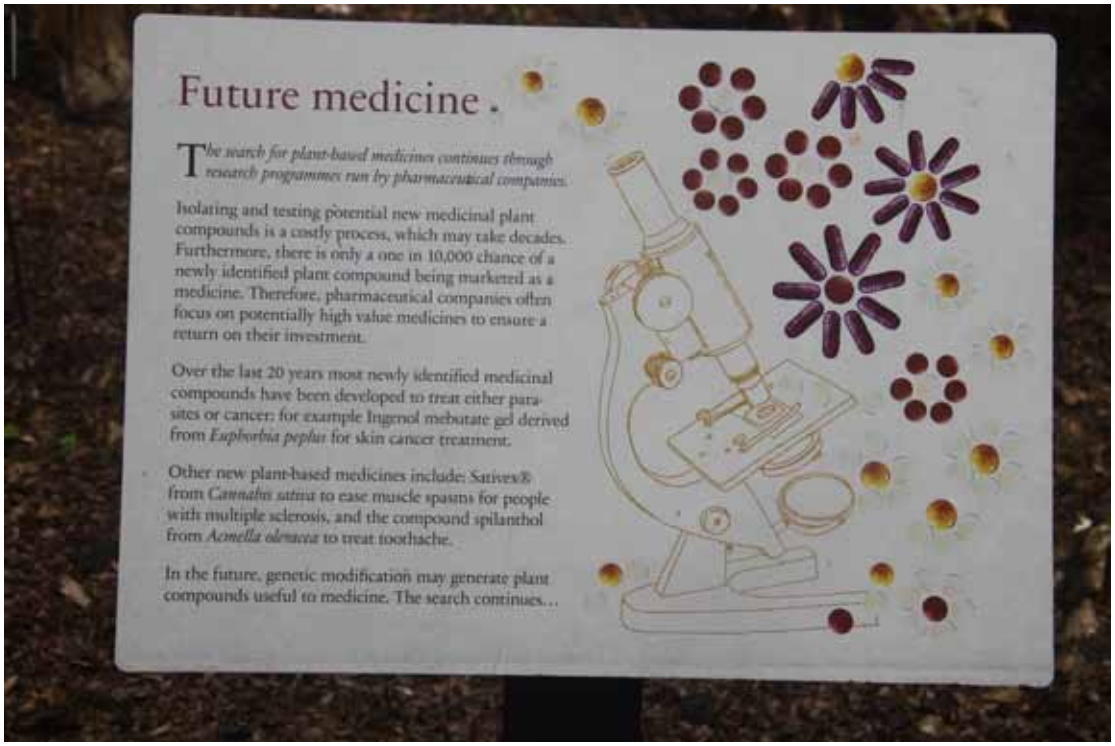
切尔西药用植物园（Chelsea Physic Garden http://chelseaphysicgarden.co.uk/）切尔西药用植物园是伦敦最早的植物园，建立于 1673 年。近切尔西药用植物园的街头我们发现有一个街道用中国的银杏做行道树，树虽然栽种的时间不长，树也不够大，但足以让一个懂植物的中国人感到自豪。

1 园内特色

园内知识牌很多，指示牌很清楚，介绍植物的名称的来源、历史著名植物学家，很多知识小品，如马车，内有典型植物知识的介绍；

橱柜，打开可以看到植物介绍及与植物相关的药品，给游客看到原料又看到产品，很直观。


conomist & Naturalist


Future medicine .
The search for plant-based medicines continues through research programmes run by pharmaceutical companies.
Isolating and testing potential new medicinal plant compounds is a costly process, which may take decades. Furthermore, there is only a one in 10,000 chance of a newly identified plant compound being marketed as a medicine. Therefore, pharmaceutical companies often focus on potentially high value medicines to ensure a return on their investment.
Over the last 20 years most newly identified medicinal compounds have been developed to treat either parasites or cancer; for example Ingenol mebutate gel derived from Euphorbia peplus for skin cancer treatment.
Other new plant-based medicines include: Sativex® from Cannabis sativa to ease muscle spasms for people with multiple sclerosis, and the compound spilanthol from Acmella oleracea to treat toothache.
In the future, genetic modification may generate plant compounds useful to medicine. The search continues…

周末除了售票的员工外，其它员工基本不用上班，他们会安排志愿者值班，3-5 个，这些志愿者都是科普导游讲解者，所有游客基本都可以得到他们的讲解。

园内有一棵油橄榄树，据介绍，这课油橄榄树是欧洲最大的。园内很多早期引自中国的植物，如有一株桂花，于 1902 年引自中国，铭牌还很清查，另外还有银杏、牡丹、山茶等，这些植物很可能是英国皇家园艺协会成立之初引种过来的。

园内陈列着一个温室小模型（Wardian Case），由外科医生 Nathanial Baashaw Ward1829 发明，当时他是该园的助理，最初的目的是给从大陆通过海上运输的植物提供一个可以获得一个受保护的小环境，旁边有一棵茶树，介绍切尔西药用植物园园长 1848 年从中国引种茶叶实生苗至印度，进行培育的最初设备。

2 园内分区

园内主要分为 4 大块：

药用植物分类区，包括按地区分类，如中国药用植物、日本药用植物、非洲、美洲药用植物等，这些分区内都是一个地区的典型、代表性药用植物；

植物系统分类区，各种植物主要按科分类，如蔷薇科、菊科、报春花科等；

小温室，其中 Geraniaceae 牻牛儿苗科植物是一个特色，收集了大量本科植物种及品种。

经济植物及生态系统植物分类区。

游客服务中心即植物书籍及园艺工具商店，植物园比较小，因而商店也就小巧玲珑，但很方便，游客可以买到其想要最实在的书籍及园林园艺工具。

六 卫斯理植物园

卫斯理植物园（RHS Garden Wisley https://www.rhs.org.uk/gardens/wisley）

该园有固定员工 90 人，临时员工 90 人，志愿者 90 人。门票成人 13 欧元。园区面积很大，逛了一圈，本人把其划分为 4 部分，精细管理区，包括各种专类园，如蔷薇园、岩石园、杜鹃园、药园等；温室，温室不大，也分为沙漠温室、热带雨林温室、棕榈温室等；粗放管理区，这部分主要在植物园的外围，包括树木园及部分果园，虽然粗放，但仍然感觉精细，主要是因为草地管理很到位。

走进卫斯理植物园就感觉进入童话世界，植物景观非常令人震撼，精细管理区的每一个角落都令人流连忘返，同一个地点，每换一个角度，都能成为一幅画。

通过询问爱丁堡植物园的职员，卫斯理植物园的特色主要在新品

种培育方面，如门口就有一棵开纯白花的紫藤品种，先花后叶，当时正值花期，片叶很少，煞是好看，不知是否是该园培养的新品种。

其中有一个科普厅很有创意，是介绍植物的地下部分根系的，感觉非常必要。植物园中的地上部分各种各样，容易观察到，但地下部分很难看到，游客在参观完园区后再参观植物的地下部分，感觉对植物会有更深的了解。

卫斯理植物园每年举行一次学生园林创意大赛，参加的每个学校提供一个最好的园林小品，面积固定，大概 2 平方左右，由游客评选。如图。学生在学校接受美育教育，如画画、手工等，但把园林园艺设计也作为一种美育教育在国内很少。


Wyvern Special School
Key Stage 3, Ages 11 – 14
Winter Wonderland
SCHOOL GARDENING

七 剑桥大学及植物园

剑桥大学（University of Cambridge）为一所坐落于英国剑桥市的研究型书院联邦制大学，是英国也是全世界最顶尖的大学之一。其植物园是一个只对大学老师和学生开放植物园，其实是给老师和学生提供一个休息、休闲的小憩圆，但是也很别致，食物和饮料不准带入园内。园内还放置中国古代孔子的雕像。





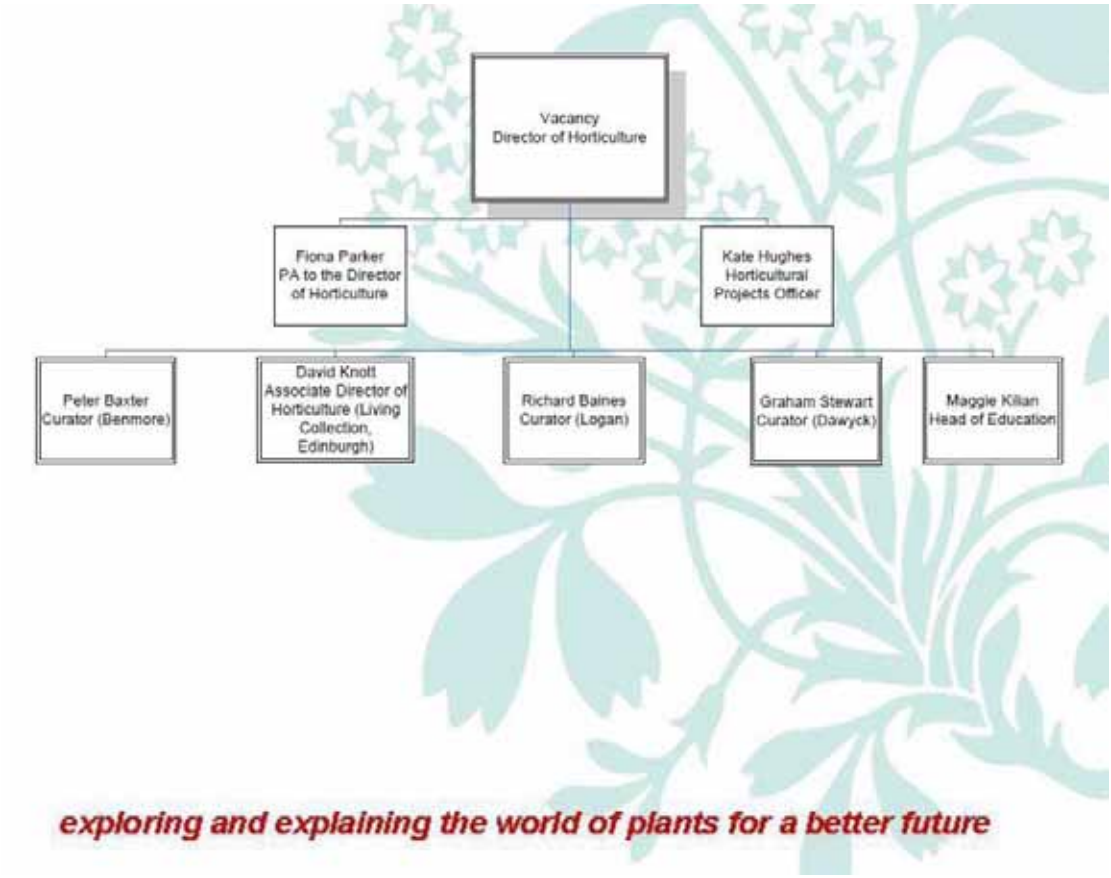

从20世纪初就开始有中国的学生到剑桥大学留学，徐志摩曾经留学于剑桥大学的国王学院。其《再别康桥》更是把我们带入一个充满浪漫和诗情画意的地方，令我们仰慕，遐想。

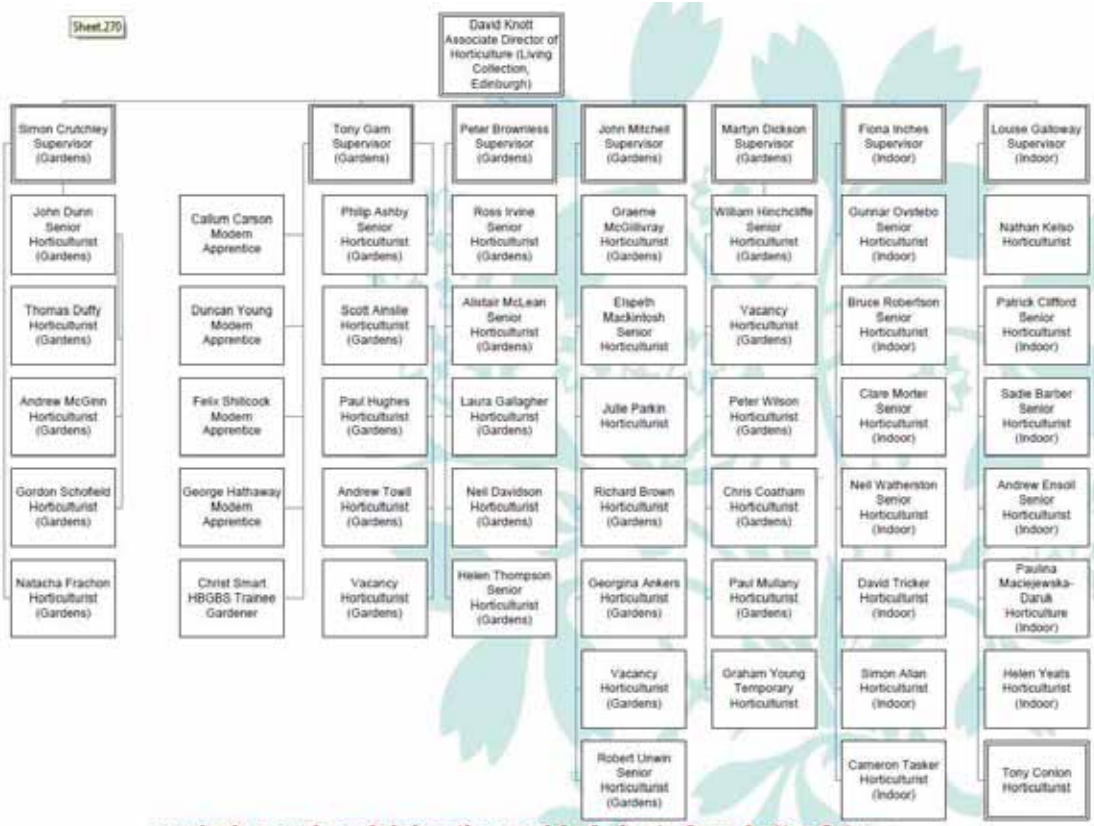
八 爱丁堡植物园

爱丁堡皇家植物园最初建成于1670年，到十九世纪早期，就以合理的布局和有利的地势闻名于世。植物园(RBGE)占地70多公顷，是紧邻城市中心的安静祥和的景观。二十世纪又合并了当地的三个植物园：本莫（Benmore）、娄根（Logan）和道克（Dawyck）。

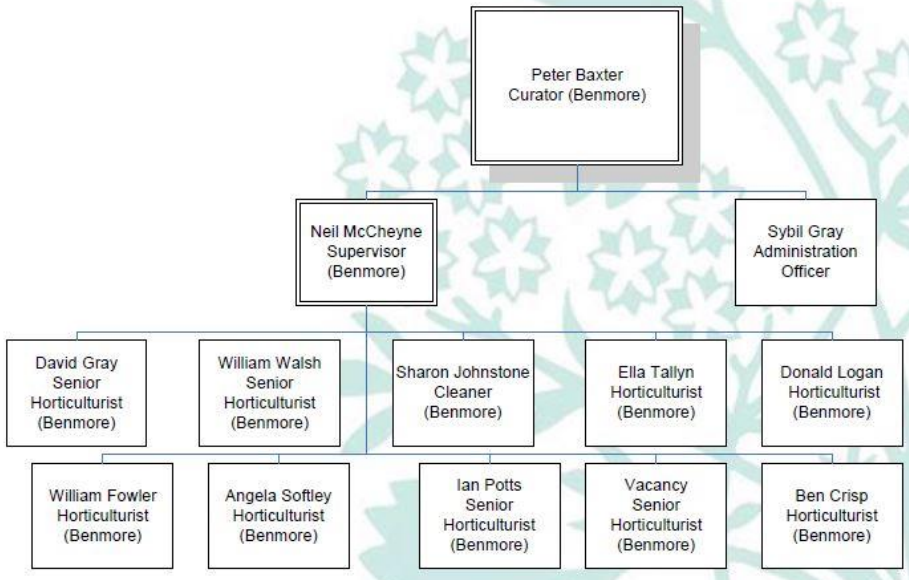
1 园林部员工岗位

爱丁堡皇家植物园的爱丁堡区(RBGE)共有负责园区景观维护的园艺师约60名，管护着面积约1000亩的爱丁堡植物园园区。园林部主要分为如下几个保育组：Indoor Team, Alpine/Rock Team, Arboretum Team, Herbaceous Team, Nursery Team等。

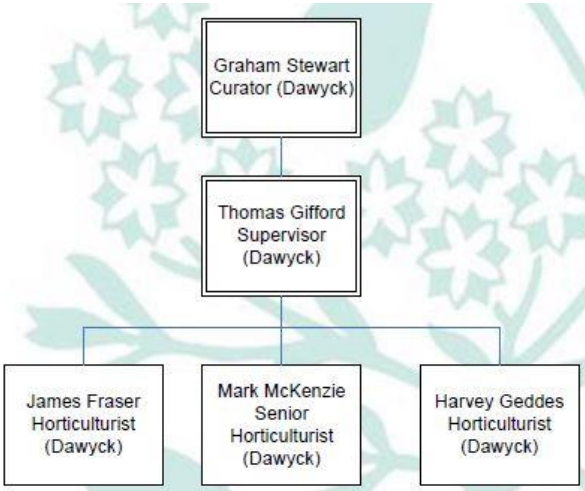


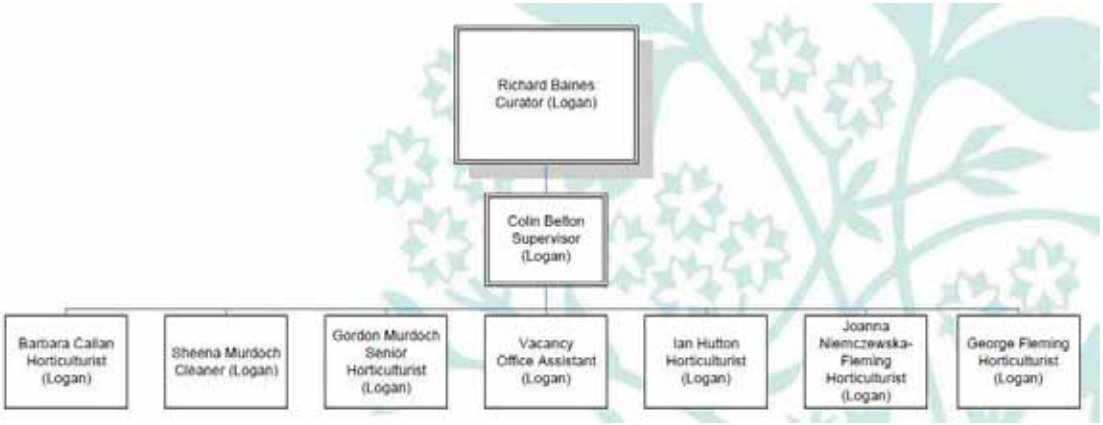


exploring and explaining the world of plants for a better future



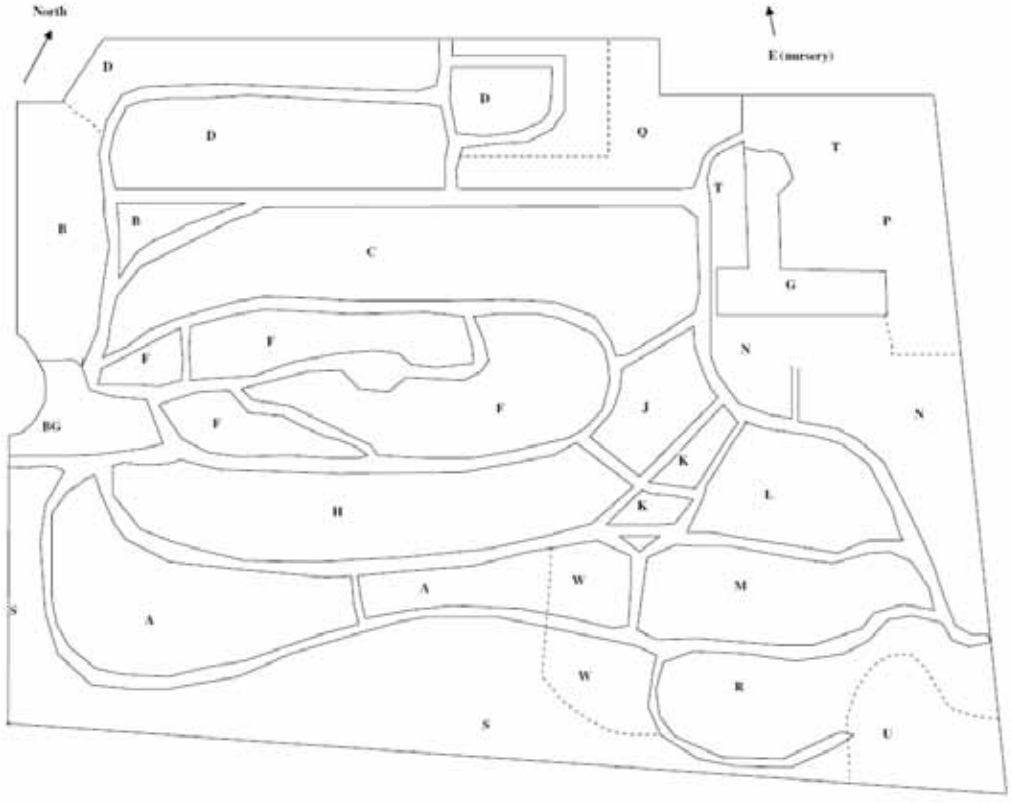
exploring and explaining the world of plants for a better future


Graham Stewart
Curator (Dawyck)
Thomas Gifford
Supervisor
(Dawyck)
James Fraser
Horticulturist
(Dawyck)
Mark McKenzie
Senior
Horticulturist
(Dawyck)
Harvey Geddes
Horticulturist
(Dawyck)


Richard Baines
Curator (Logan)
Colin Belton
Supervisor
(Logan)
Barbara Callan
Horticulturist
(Logan)
Sheena Murdoch
Cleaner (Logan)
Gordon Murdoch
Senior
Horticulturist
(Logan)
Vacancy
Office Assistant
(Logan)
Ian Hutton
Horticulturist
(Logan)
Joanna
Niemczewska-
Fleming
Horticulturist
(Logan)
George Fleming
Horticulturist
(Logan)

2 景观及保育分区


KEY
FACILITIES
FEATURES
SCULPTURES
YOU ARE HERE
INVERLEITH TERRACE
ARBORETUM PLACE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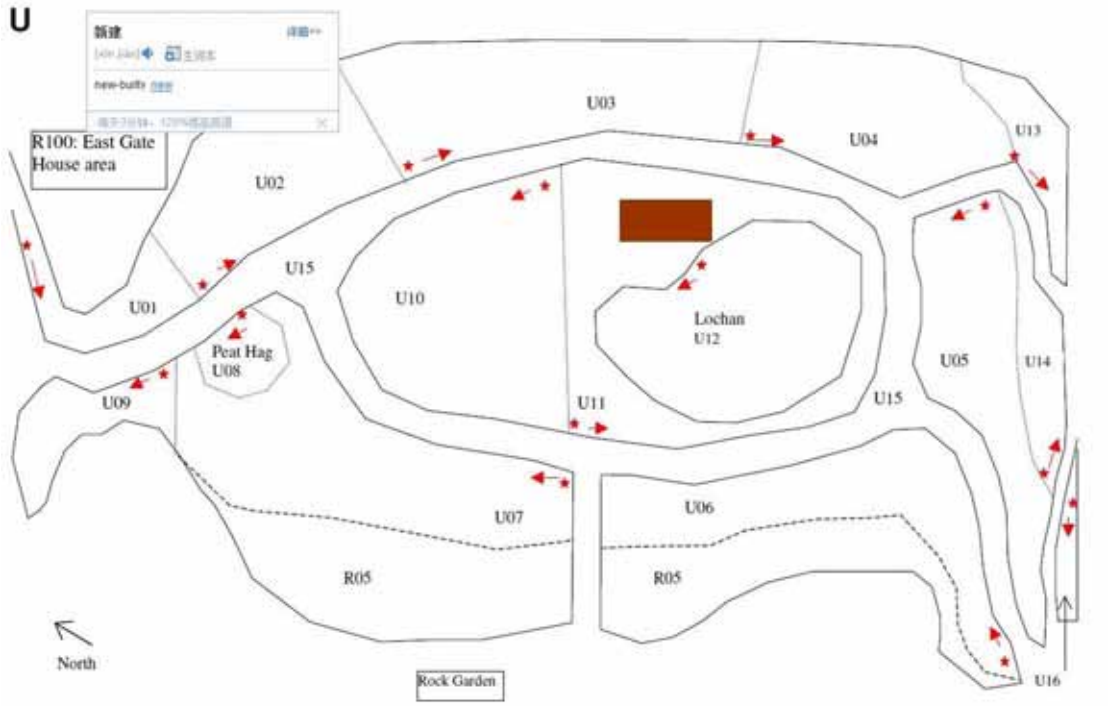
3 岩石园

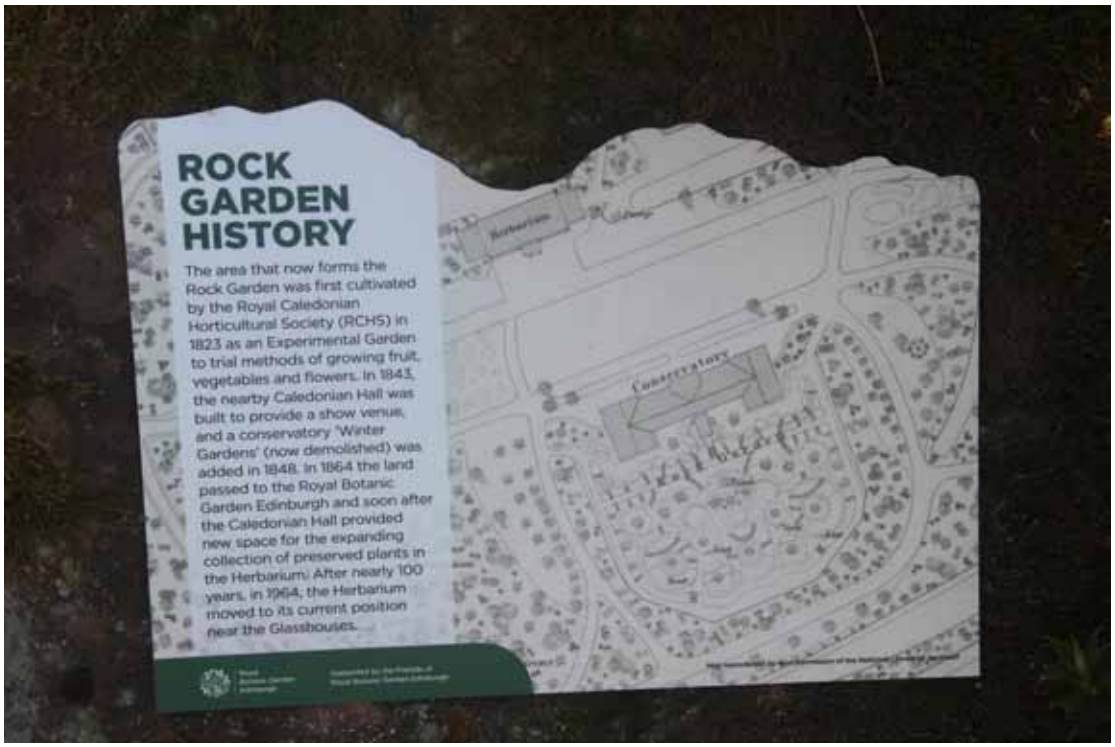


岩石园分区图

现任岩石园的主管为 Robert Unvin,加上 Supervisor John Mitchell 共七人，管理这岩石园、高山园及林苑（Woodland）

岩石园建成于 1871 年,是以岩石为主要的景观效果,收集了 5000 多种植物，包括高山植物（Alpins)、寒带植物（Sub-arcticplants)、草原植物（Pastureplants）和矮生的乔、灌木，人工种植养护这些生长在特殊生境的植物是一项丰常艰难的工作。1914 年，又铺装了苏格兰佩思郡的砾石和敦夫里斯郡的红砂岩构建了新岩石园,使生长

在岩石园前面草坪上的植物享受到下面排水良好的沙砾层。岩石园几乎被认为是植物园的焦点。




Sempervivum
marmoreum


The CALEDONIAN HALL
& the former RCHS Experimental Garden
This building is named in honour of the Royal Caledonian Horticultural Society (RCHS, often known as the Caley). They commissioned its construction in 1841, primarily as an exhibition hall for its flower shows, to be staged in the heart of the Society's garden.
From 1864 until 1964, it housed the Herbarium, the Royal Botanic Garden Edinburgh's vital scientific reference collection of preserved plants, which now amounts to more than three million dried and pressed specimens – a real dictionary of the plant kingdom. This invaluable resource is now located in the dramatic white Herbarium and Library Building in the north east corner of the RBGE.
Today the Caledonian Hall is an occasional venue for shows and exhibits, but is primarily used as an exclusive venue for Garden, corporate and private events, including weddings and other receptions.
The Caley Garden & the Botanics
The National Lottery
To see an expanded version of the Experimental Garden Plan, visit the East Gate Lodge

4 保育温室

保育温室分开，按不同类群或不同地区，便于管理；苗床有的铺满了一层很厚的沙子，问之用于保湿；温室成员 9 人，每人一个温室；水族馆很精细，每一个水箱都很小，长约 1.5 米，体积约 2 立方米，植物没有怎么分类，里面放了若干小鱼，每次换水约一半，为了保持水质的相对稳定。

5 巨魔芋

今年夏天爱丁堡植物园栽培了 13 年的巨魔芋开始开花，这是今年爱丁堡植物园的一大盛事。巨魔芋花序高约 180 厘米。工作人员每天下班上班之前给它量一昼夜的生长高度，最快一天增高 10 多厘米。今天的花序长 1.5 米。消息放在网上，吸引很多游客来观看，其中有一个周末 2 天，游客太多，不得不分批让他们进入温室参观。平常的周末是很难见到排队如温室的情况。其中有一个游客夫妇说 2 年前听说，想来看，今天终于如愿以偿。但今天花还没有开。

由于温室设计没有考虑整个围墙，担心有游客不买门票，有几个门都拿绳子或隔板挡住，只给一条路出入，是当时设计没有考虑的地方。


New Reekie
at the Botanics
Amorphophallus titanum (titan arum), one of the world's biggest and smelliest blooms, is set to flower. It's a first for the Botanics and for Scotland. And, it's getting bigger by the day!
Today it is in bud
Buy your Glasshouse ticket now (valid today)
Follow its progress www.rbge.org.uk/titan-arum www.facebook.com/thebotanics Twitter:@thebotanics
Royal Botanic Garden Edinburgh

6 岩石的艺术

爱丁堡植物园的高山温室别具一格，很多垫状、小型植物都种在盆里，然后放在温室里，另外一些种在室外的石槽中，一个石槽一个小品，很别致，很漂亮，石槽是人们捐赠或购买，听说很贵。基于石槽这一漂亮的器具，爱丁堡植物园的工作人员利用用泡沫箱制作仿制

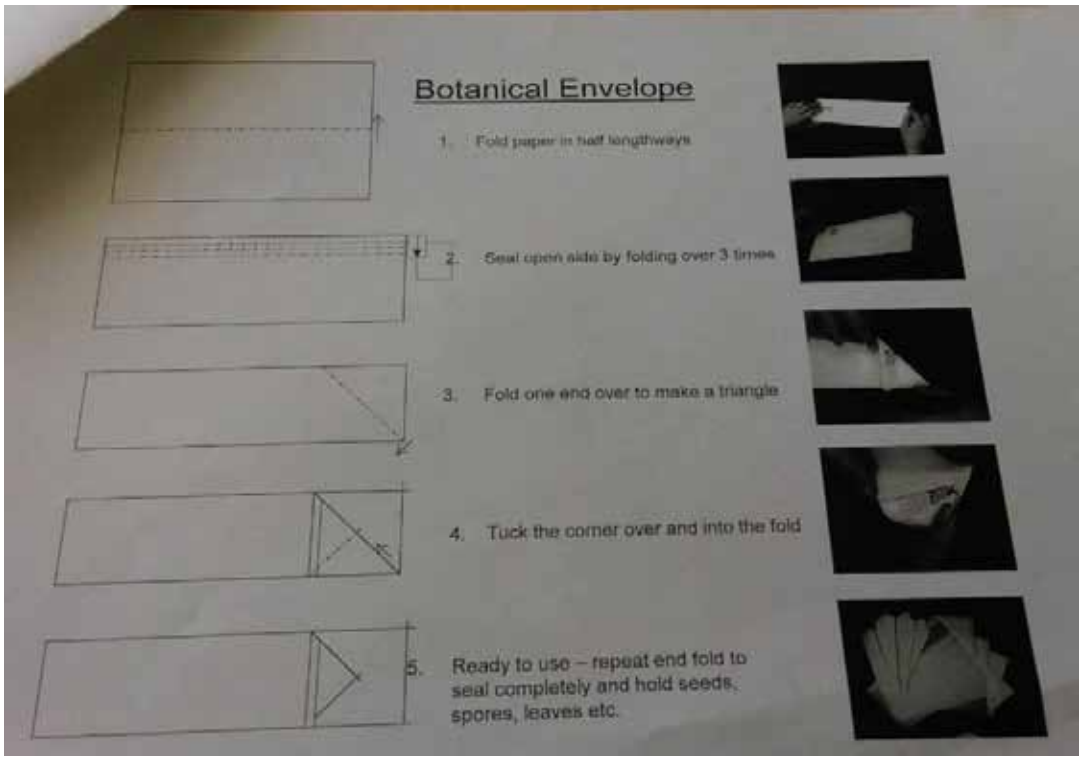
石槽，也非常具有艺术匠心。

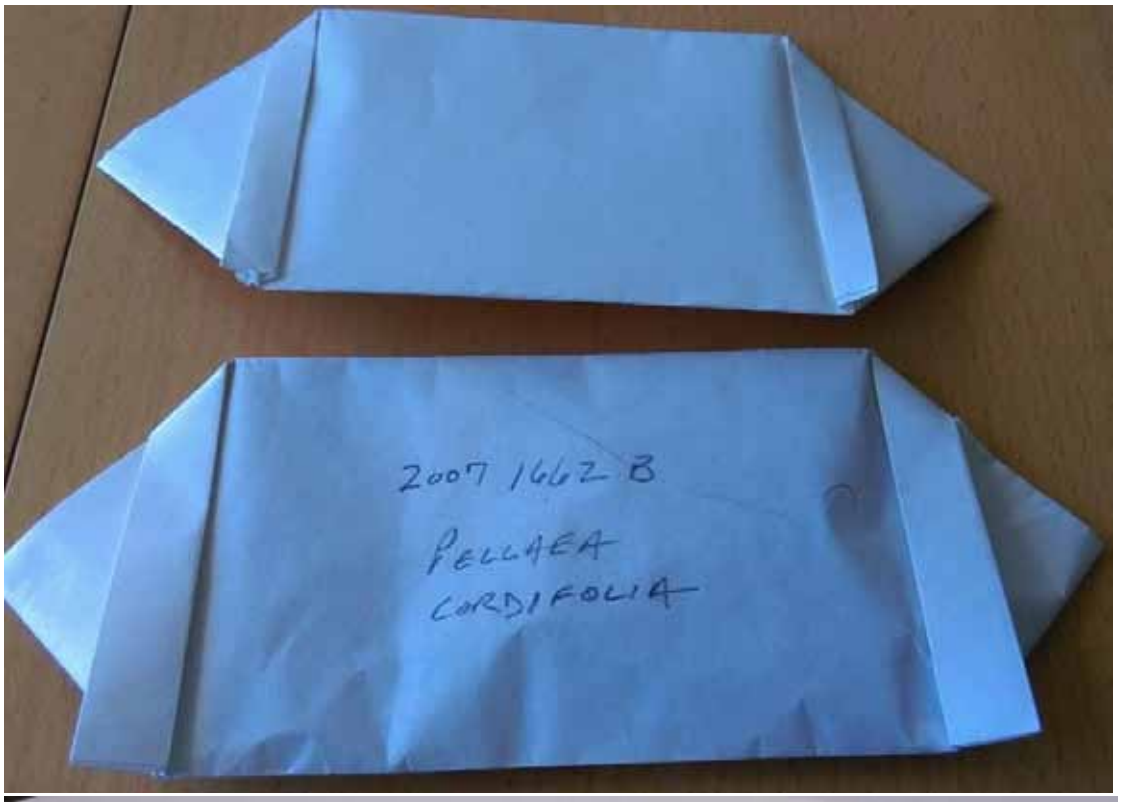

MASONRY PAINT
MASONRY


W
ASPHODELACEAE
Haworthia
coarctata
Brandham &
Cutler 102/1174
1978.0670.A
S. Africa (Cape)

7 蕨类保育

爱丁堡植物园园林部有一个孢子库，储藏原理和邱园的种子库一样，只不过是孢子库所需要的空间小。有两间特为培养孢子而建造的培育气候室。他们的员工曾经在 2010 年从保存在标本馆 100 多年的标本上找出孢子培育成为活体植株，该保育工作已经发表在园林园艺权威刊物 SIBBALDIA。


Botanical Envelope
1. Fold paper in half lengthways
2. Seal open side by folding over 3 times
3. Fold one end over to make a triangle
4. Tuck the corner over and into the fold
5. Ready to use – repeat end fold to seal completely and hold seeds, spores, leaves etc.



SIBBALDIA:
The Journal of Botanic Garden Horticulture, No. 9

PROPAGATION OF DRY HABITAT FERN SPECIES USING SPORE COLLECTIONS FROM HISTORIC HERBARIUM SPECIMENS

Gunnar Øvstebø[1], Alex Twyford[2] & Tina Westerlund[3]

Fig. 1 Herbarium specimen of *Actiniopteris semiflabellata*. Spores were taken from the capsule in the lower left-hand corner of the sheet. Scan: Muhammad Ghazali.

Fig. 2 Herbarium specimen of *Aleuritopteris scioana*. Spores were taken from material in the capsule in the top right-hand corner of the sheet. Scan: Muhammad Ghazali.

8 树木组工作

树木组工作的工作非常重要。管理爱丁堡植物园所有的树木，同时它有自己需要管理的一块园地。紧急情况时，也就是大风暴后这个部门要赶紧清理被大风刮倒的树木，同时要检查没有刮倒的树木的安全性，检查高大树木的分枝是否会对公众造成危险。大风暴和大风暴后整个园区有时候会关闭 1-3 天不等。珍稀树木他们主要分枝如有受损，都会进行保护。

9 堆肥站

堆肥站 Compost area 面积约 1000 平方米，收集园林枯枝落叶等有机垃圾，这些垃圾很好的进行分类，如杂草、树叶、小树枝、大树枝等都必须分类，职员都有很强的分类意识，特别是恶心杂草，在堆肥站有一块单独的地方堆放，让其长时间堆呕，腐烂，发酵，然后进

行堆肥处理。发酵会产生摄氏 50° 左右的高温，负责员工会定期进行温度测量，高温维持一定时间病菌杀死后才可以拿回植物园提供园区覆盖物原料利用。大型粉碎机每年租用一次，用以粉碎比较粗大的树枝，说是很贵。爱丁堡植物园只有小型粉碎机。

10 园林机械

园林机械比较全，除草机、松土机、吹风机等凡是园林园艺上需要用到的机械，爱丁堡植物园都有，有效减少了工人的劳动量，提高了工作效率。工作之后大部分的器具要求放回工具房摆放整齐，少量收在园区隐蔽区。


DRAPER
150
LONCIN


BOBCAT


150

11 设施维护

植物园有“零垃圾”的规定，养成节俭不浪费的习惯。植物园里产生的废铁及其它废弃机械器材，他们都会集中统一回收，卖到废品店，所卖废铁的钱归植物园所有。园林机械小问题都必须自己维修，大问题请专业人员上门维修，平时机械维护一定会好好管理，如为防治机械生锈，员工都是自己上漆。


Metal recycling
No rubbish please!

12 职业园艺师培训

专业园艺培训在爱丁堡植物园已经有 100 多年的历史，颁发的结业证得到国际植物园保护联盟（BGCI）的认可。

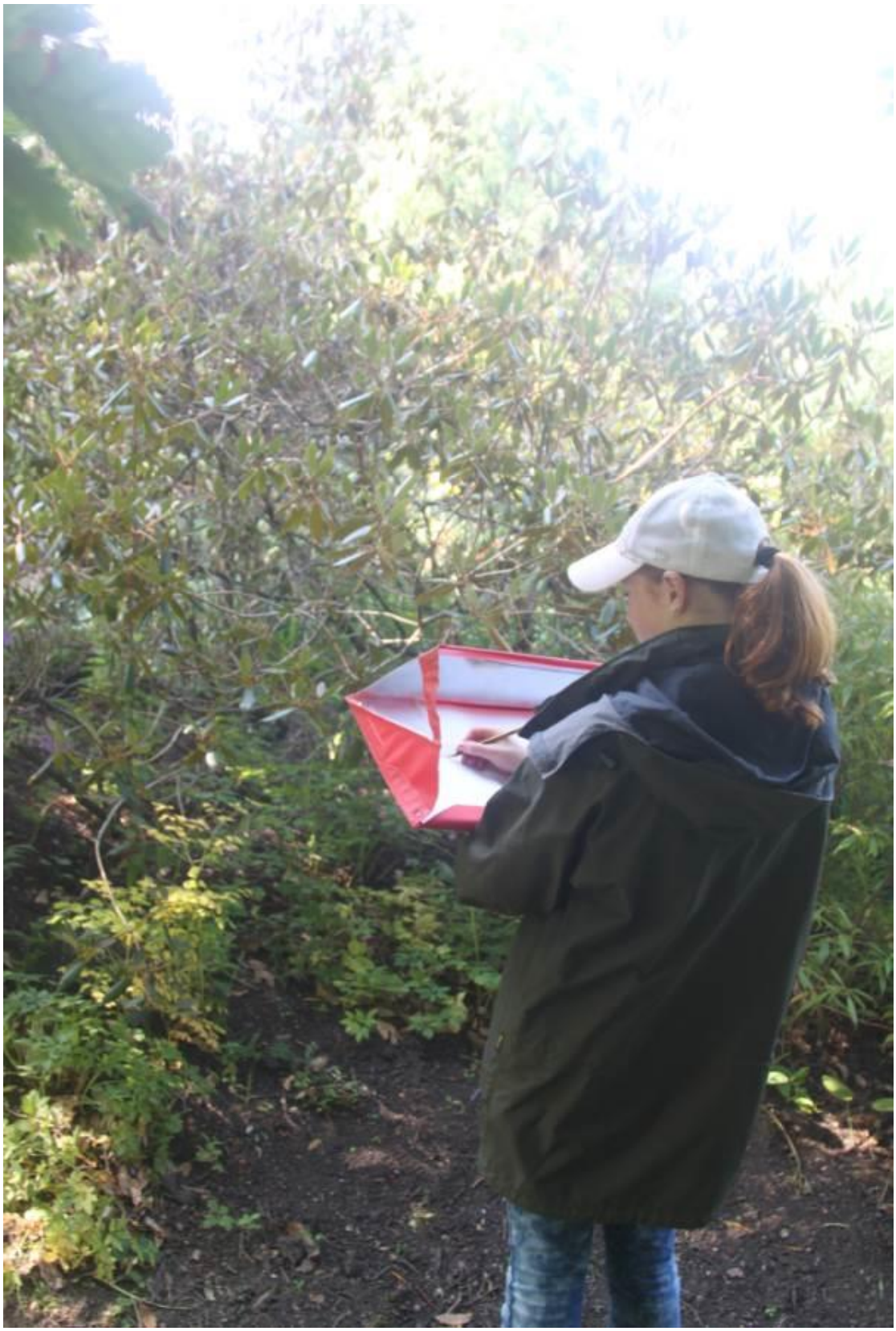
这期学员 16 名，学费 500 英镑，如果没有学位证的大不列颠公民，培训费全免。中国 5 名旁听。学生来自世界各地，主要是来自西方国家，了参加培训的目的各异，其中有爱丁堡大学的两个教授，自己家有花园，需要学习；法国一个学员，想换一个关于园艺方面的工作，另外一个学农学的硕士，说自己没有接触过植物，需要了解；来自美国的一位退休女士，自己的小农场非常干旱，想看看英国这边湿润潮湿的气候，等等。他们学习都很认真。学习包括 8 个课程，认识植物，认识土壤，浇水及施肥，种子繁殖，营养繁殖，栽培基质及植物换盆，植物种植，修剪及植物整形。每个课程培训 1 天，培训老师授课很认真，教的很仔细，学生也学得很认真，提问很积极。有很多细节值得学习，如怎么有效地浇水，怎么换盆，怎么拆卸枝剪，维护枝剪，土壤检测等。


Maxicrop


AXIS
GORE-TEX

13 数据收集

几乎所有的植物都入 BG Base 数据库，这样很方便找到植物，也容易对植物在园区被栽种到不同地点保存记录。同时园区更换植物后，即及时更新数据库。病虫害记录常年进行，很多交由实习生来完成。植物形态数据和物候数据由 BG Base 数据组组织学生进行。



14 园林部内部管理

14.1 员工自我教育

园区园林部办公区的张贴栏会经常贴出有关植物保护的知识、病虫害防治的知识、生态环保的知识。经常更新。对生态环保做出突出成绩的员工会进行表彰，如下图。

Royal Botanic Garden Edinburgh

ROYAL BOTANIC GARDEN EDINBURGH

ENVIRONMENTAL POLICY

Policy Statement

As a leading centre for biodiversity research, horticulture, conservation and education, and a major visitor attraction on its four sites, RBGE is committed to improving its environmental performance as part of a wider commitment to sustainability. Along with the Sustainable Development Policy, this policy reflects this commitment.

Recognising our role within the community we aspire to share our core values with our partners, reduce our impacts on the environment and promote resource efficiency. As an international institution engaged in environmental and biological issues we recognise the increasing threat of climate change and the serious consequences that it will bring. We will maintain our research interest in climate change as it affects vegetation, work to help the Scottish Government and the international community to reach their carbon reduction commitments, develop plans to reduce our own impacts and use the Garden's facilities to explain climate change issues to the public.

Principles

In the application of this environmental policy we will:

- meet or exceed requirements set out in current UK environmental legislation
- seek to provide the resources required to deliver this policy
- reduce our impacts on the environment in the following ways:
    - adopt the waste hierarchy of prevent, reduce, recover, reuse and recycle
    - be efficient in the way we use water and control any resulting discharge
    - support sustainable modes of travel
    - promote energy efficiency throughout our operations
    - reduce harmful emissions to the atmosphere
    - minimise the use of hazardous substances by seeking alternatives
    - procure materials and services within a framework that encourages sustainability
    - minimise potential nuisances such as noise, dust, litter, odour, light pollution
- measure, promote and protect biodiversity both locally through the management of our sites in Scotland and internationally through our conservation work in the UK and worldwide
- promote good environmental practice to visitors, students, staff and volunteers
- maintain an Environmental Management System and achieve continual improvement through a cycle of audit and review.

Policy Commitment

Senior Management acknowledge their responsibilities in delivering this policy and recognise the importance of engaging all staff in its implementation.

Signed:

SIMON MILNE MBE

Date: March 2014

14.2 作息时间

园林部上班时间周一至周五：上午 7：30 上班，9：00-9：30 早餐；12：00-12：40 中餐；下午 3：00-3：15 茶歇；3：50 或者 4：30 下班，周五下午 2：30 下班。据了解，园林部有 2 个员工上、办时间例外情况，即高山园苗圃的 Elspeth Mackintosh 和室内组负责蕨类保育的 Andrew Ensoll 他们都会比其它员工推迟上班半个小时，他们会自觉相应的推迟半个小时下班。当其他人都背着包回家时，他们任然在认真工作，直到他们走后半小时。我下班经过苗圃时经常看见 Elspeth Mackintosh 一个人在苗圃摆弄着他的蕨，我觉得他们在这方面都很诚信。

14.3 园林部员工福利

3.1 自助厨房

爱丁堡植物园内后勤部开有员工餐厅，一人一顿 3-5 英镑不等，同时园里提供自助厨房，方便部分职员自带中餐。

3.2 浴室、洗衣房及工作服

园林部提供工作后浴室及洗衣房，每人每年提供 200 英镑的免费工作服，如鞋子，夹克，背心，雨衣等，各种各样，但都有爱丁堡植物园的标志，质量都非常好，自己自由挑选，植物园的员工在园区工作要求穿工作服；志愿者来植物园工作时也按规定要求穿这种工作服，只是上面标有志愿者(Vonunteer)这个字样，实习生的工作服上标有学生（Student）的字样，园林部员工身穿工作服在园区工作，显得非常的整洁，颜色也和环境非常协调，看着他们身穿工作服认真工作在园区也是一道非常漂亮的风景线。

3.3 垃圾分类

整个英国的垃圾分类都做的很好，爱丁堡植物园的垃圾分类更是表率，对其员工要求更是严格。其垃圾分类很细，园林垃圾要求送到堆肥站去做肥料，其它生活垃圾更是妥善处理。其园区的垃圾箱设计更是匠心独具，乍一看，你有时候还看不出它是一个垃圾箱。

recycle

Royal Botanic Garden Edinburgh

At RBGE we aim to reduce, reuse and recycle waste where possible. **Please play your part in this.** There are Area Champions for all environmental concerns; if you are unsure of what to do with any items you have, please ask your Area Champion.

paper	Any paper or envelopes including telephone directories and leaflets that tear easily can go into the paper bin unless soiled or laminated with plastic.
food tins & drink cans	Steel, aluminium cans and clean tin foil can all be recycled together. Please wash and squash before placing in the can bin. Any other metal can be recycled in the labelled trailer behind the Palm House.
plastics	Food and drink containers and bottles can be recycled here. Please wash all bottles and containers before placing in the plastics bin. **Plastic bags & crisp packets cannot be recycled** – these must be put in general waste.
mixed glass	This can be taken to the wheelie bin in the corridor behind the canteen or in the John Hope Gateway yard. Please wash bottles and jars before placing in the mixed glass bin.
cardboard	This can be flat packed and put inside a cardboard box or bundled with tape or string. A bundle should weigh no more than 10kg. Please leave it by your bin or office door where it can be collected by the cleaning contractors.
batteries	There is a box for dead batteries used on site. Put them in an internal mail envelope addressed to 'Dead Battery - Stores'.
garden waste	The nearest bin for organic and plant waste is in the Teaching Laboratory. **N.B. For bio-security reasons plant material from other gardens must not be put into the general waste bins.** Take away plant material that you bring with you in a sealed plastic bag.
coffee grounds & tea bags	Ask your Area Champion where the nearest tea bag caddy is. Please only put tea or coffee in here. We are only licensed to put this waste on our compost heap.


Cans
Plastics
Recycle...
General Waste
because some things don't grow on trees


Cans
Plastics
Recycle...
General Waste
because cans and bottles don't grow on trees

15 园区安保

整个园区关键区域安装摄像头，工作时用机械及机车的，都必须佩戴安全帽，开割草机的必须同时佩戴隔音器（deafener），工作场所必须放置告示牌。池塘旁边必定放置紧急救生器具，这样使人们游览植物园时真正是一种放松的休闲，遇到大风暴来临，预先在各种媒体告

示，关闭园区，直到风暴结束。


Tree
cutting


Tree


Tree
cutting


EMERGENCY
ONLY
LIFE
LINE

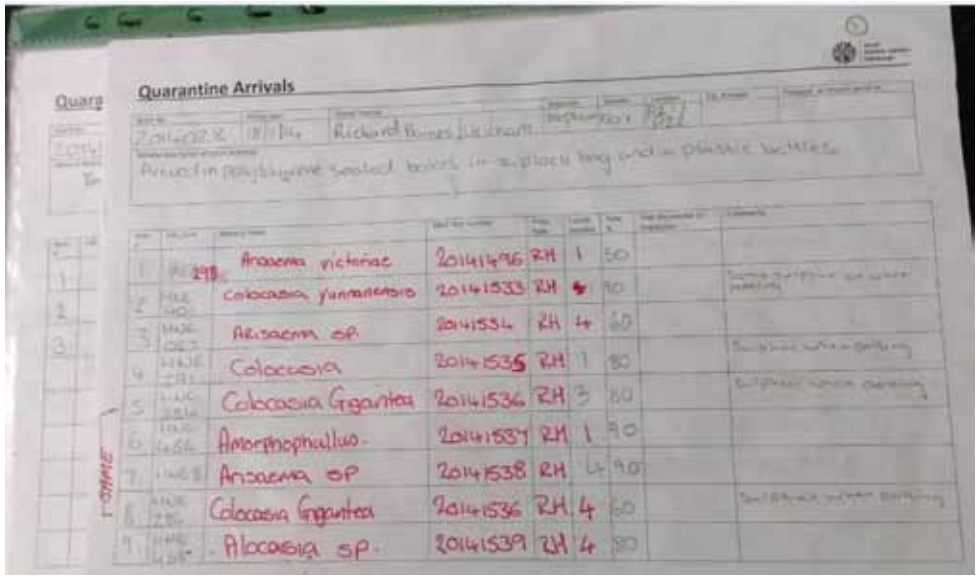

EMERGENCY
ONLY
LIFE
LINE

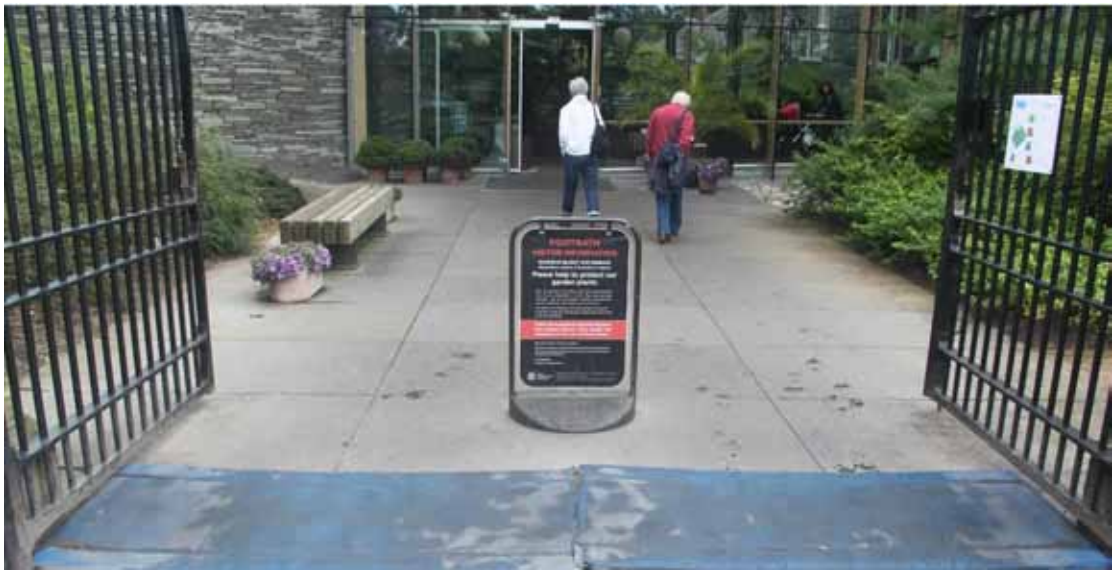
16 防疫措施

在园林部工作室张贴有病虫害防治宣传画册。检疫室检疫很严格，负责员工必须按严格的消毒制度进行检疫，同时必须每个月向政府报告检疫情况。温室内放置生态灭虫片和物理灭虫片。园区发现疫情必须当场销毁，接触的枝剪必须消毒。各种公众出入的关键门口都放置有供鞋底消毒的消毒垫。


KEEP AN EYE OUT
FOR THESE PESTS!
STOP
THE SPREAD

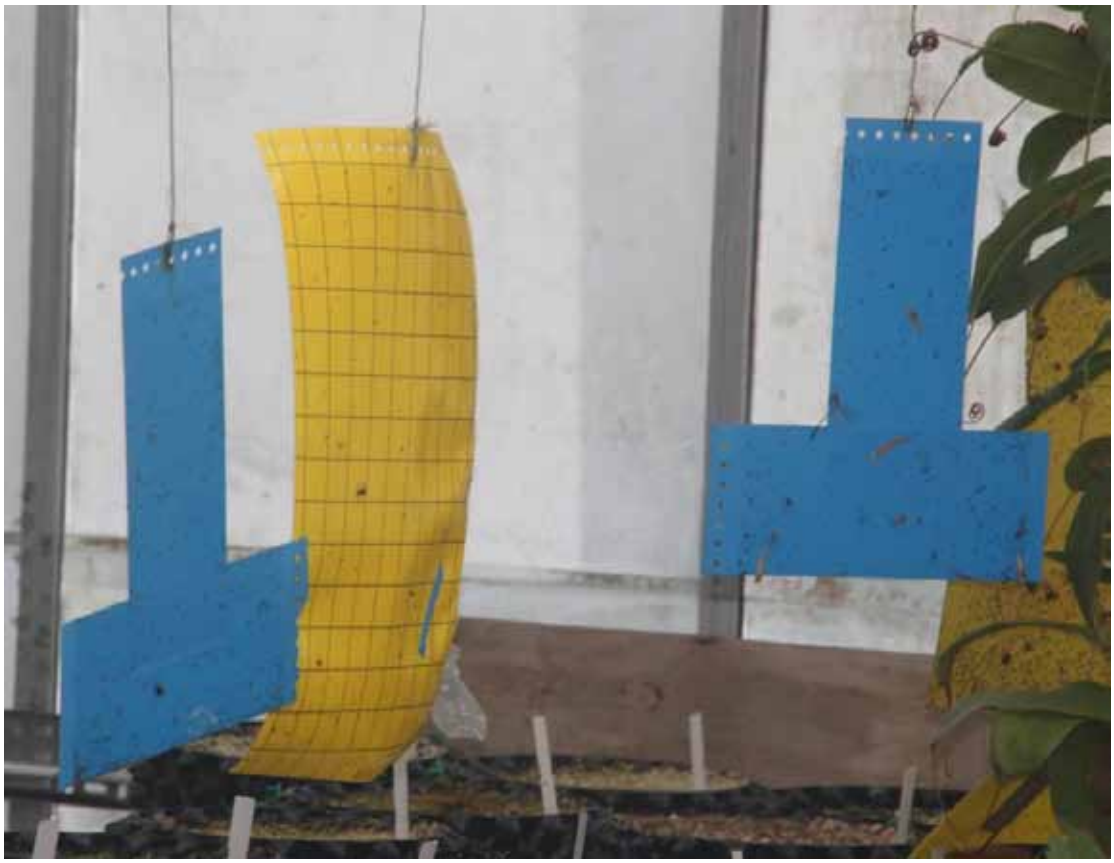

THE NATIONAL TRUST
How to protect your garden from pest and disease invaders
1 Plants coming in:
What can you do?
2 Plants on arrival need careful inspection.
Remember to:
3 Quarantine areas should be located from the main garden and the public.
What more can you do?
4 Day-to-day hygiene:
It's important to:
5 Basic path maintenance can help too.
How?
6 Good plant husbandry
What can you do?
7 Clear information
Why put up a notice?
8 Irrigation water
How can you ensure this?
9 Organic waste
What should be done with it?
10 Plant collections
What can you do?
11 Regular monitoring
What can you do?


Quarantine Arrivals
Richard
Anaecma victoriae
Colocasia yunnanensis
Alocasia sp.
Colocasia
Colocasia Gigantea
Amorphophallus
Anaecma sp
Colocasia Gigantea
Alocasia sp.
20141496
20141533
20141534
20141535
20141536
20141537
20141538
20141536
20141539




Royal Botanic Garden Edinburgh
Indoor Department
House 10 (Zone 2A)
Garden Location: P22 – Temperate Quarantine
Environmental Conditions: Night Temp 10°C
Clock 12°C
Day Temp 13°C
Vent Temp 15°C
TEMPERATE QUARANTINE!


NOTICE
AVOID
ONTAMINATION
VASH YOUR
HANDS
Royal Botanic Garden Edinburgh
Indoor Department
House 12 (Zone 4A)
Garden Location;
P24 – Quarantine reception
Environmental Conditions: Night Temp 10°C
Clock 12°C
Day Temp 13°C
Vent Temp 15°C



Royal
Botanic Garden
Edinburgh

We are removing the *Juniperus rigida*

Samples taken from lesions at the base of the tree have tested positive for the plant disease *Phytophthora*.

To contain the disease we are burning on site.

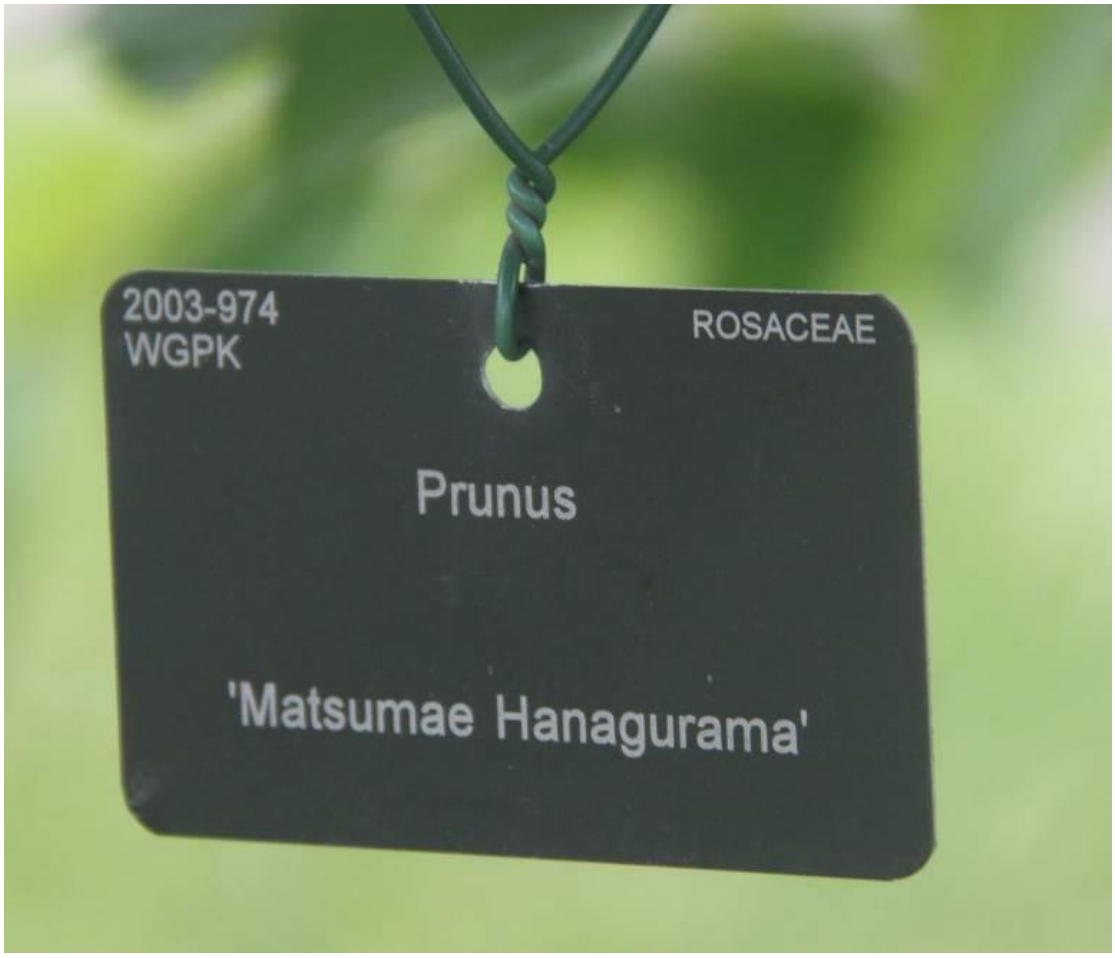

Royal
Botanic Garden
Edinburgh
We are removing the Juniperus rigida
Samples taken from lesions at the base of the tree have
tested positive for the plant disease Phytophthora.
To contain the disease we are burning on site.

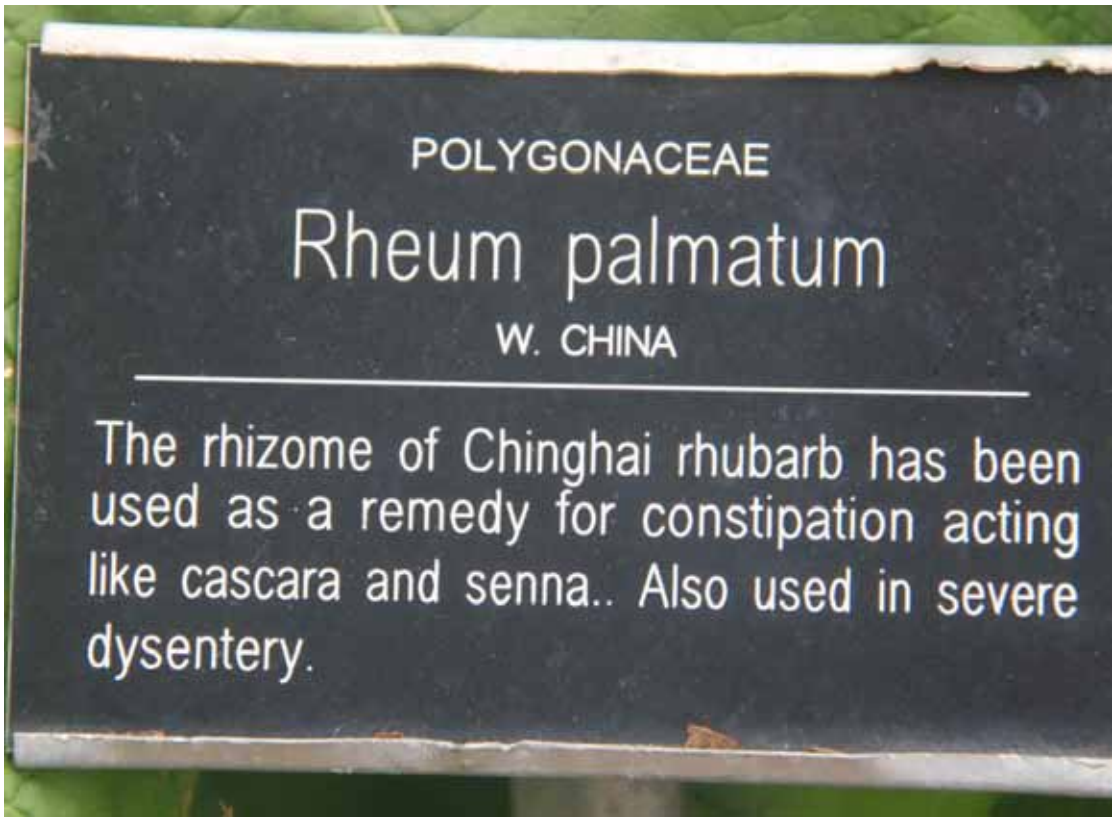
17 植物铭牌及标识系统

不同植物园的知识标牌规格、颜色基本一致，插干都是铝质，铭牌都是黑底白字，简洁，铭牌上没有本园的标志，没有用途功效。但有毒植物有骷髅的标志。最近 BG Base 负责人批判这种铭牌缺少公众服务意识。标识系统各园有自己的特色，道路系统指示明确。

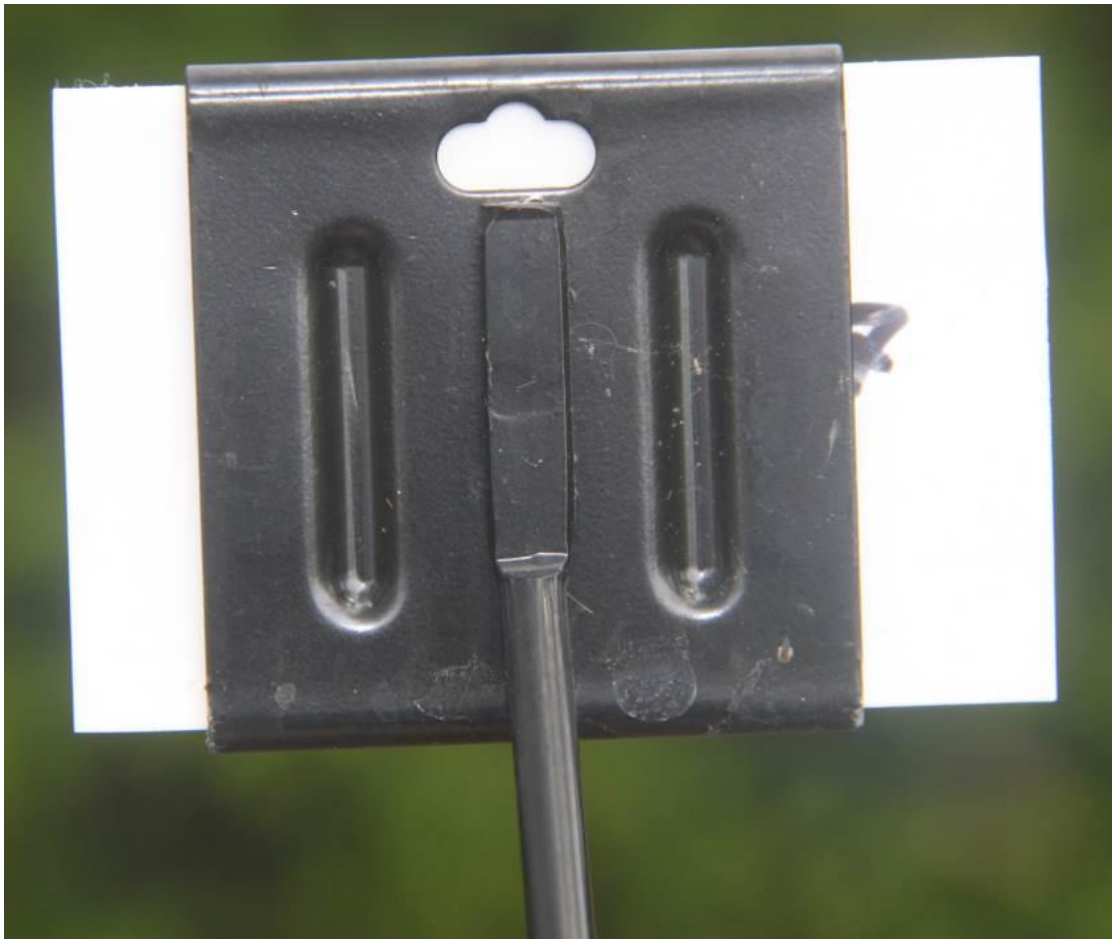

1923-918
EDIN
ROSACEAE
Sorbus
alnifolia
JAPAN, KOREA


LAURACEAE
'SWEET BAY'
LAURUS
NOBILIS
MEDITERRANEAN, S.W. ASIA


2003-974
WGPK
ROSACEAE
Prunus
'Matsumae Hanagurama'


POLYGONACEAE
Rheum palmatum
W. CHINA
The rhizome of Chinghai rhubarb has been used as a remedy for constipation acting like cascara and senna.. Also used in severe dysentery.

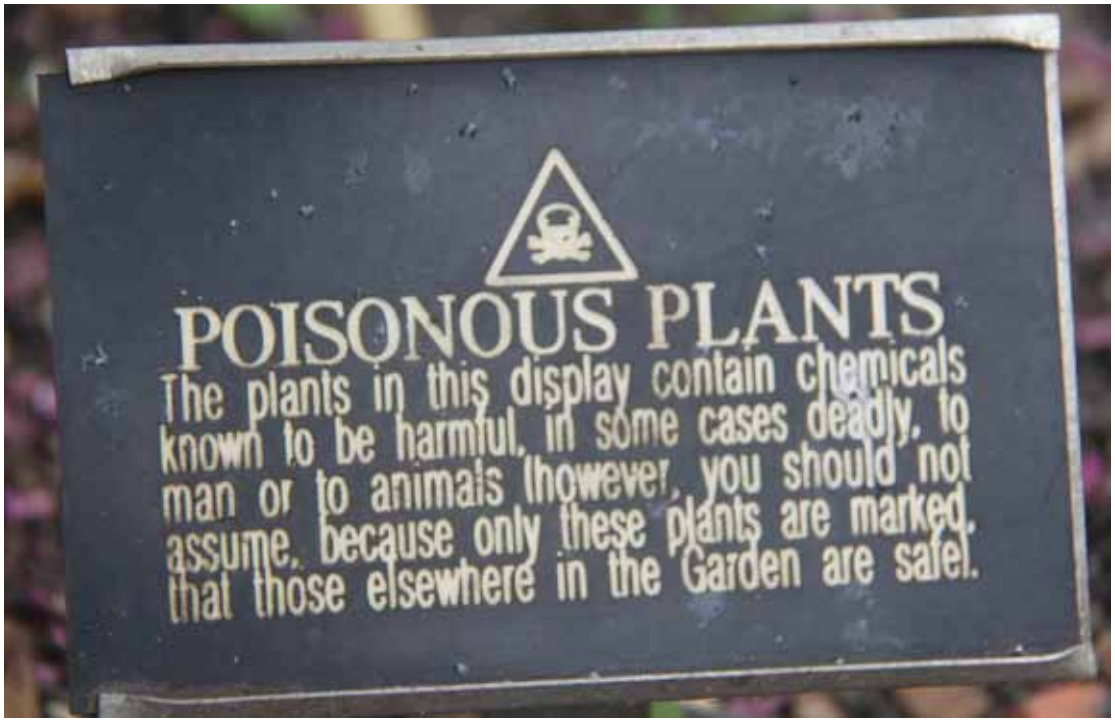

POACEAE
Coix lacryma-jobi
E. ASIA




POACEAE
Coix lacryma-jobi
E. ASIA

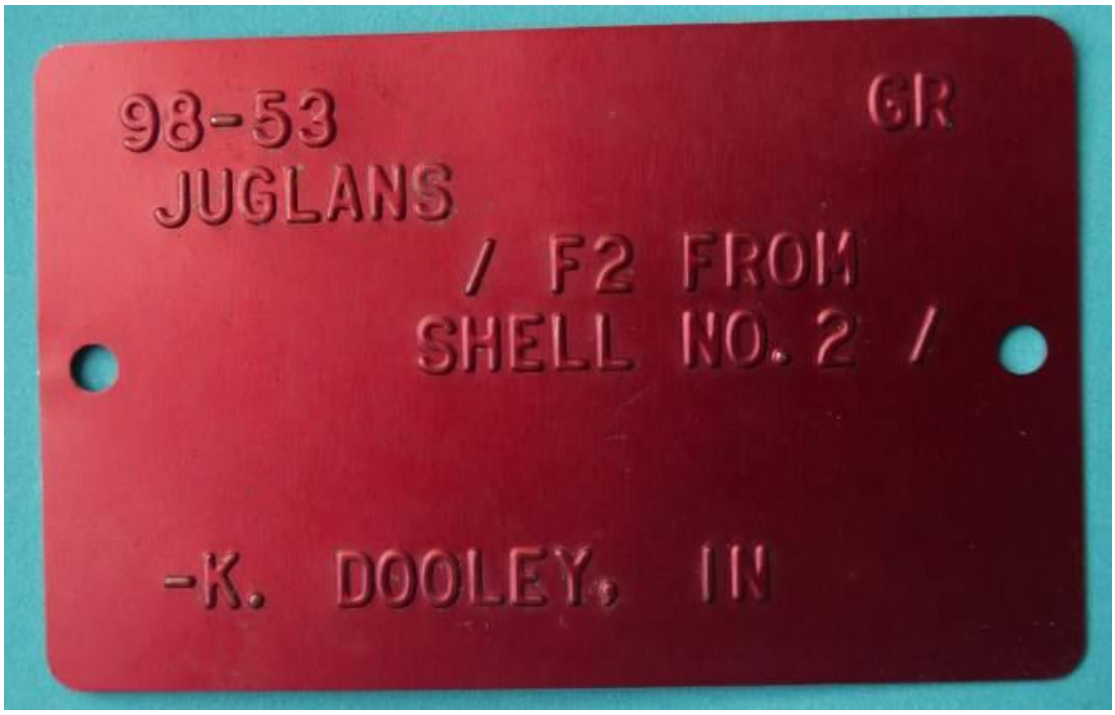

ROSACEAE
MEDLAR
Mespilus
germanica
'Nottingham'


W20022112-C
Hamamelidaceae
Hamamelis
x intermedia
'Jelena'


POISONOUS PLANTS
The plants in this display contain chemicals known to be harmful, in some cases deadly, to man or to animals (however, you should not assume, because only these plants are marked, that those elsewhere in the Garden are safe).

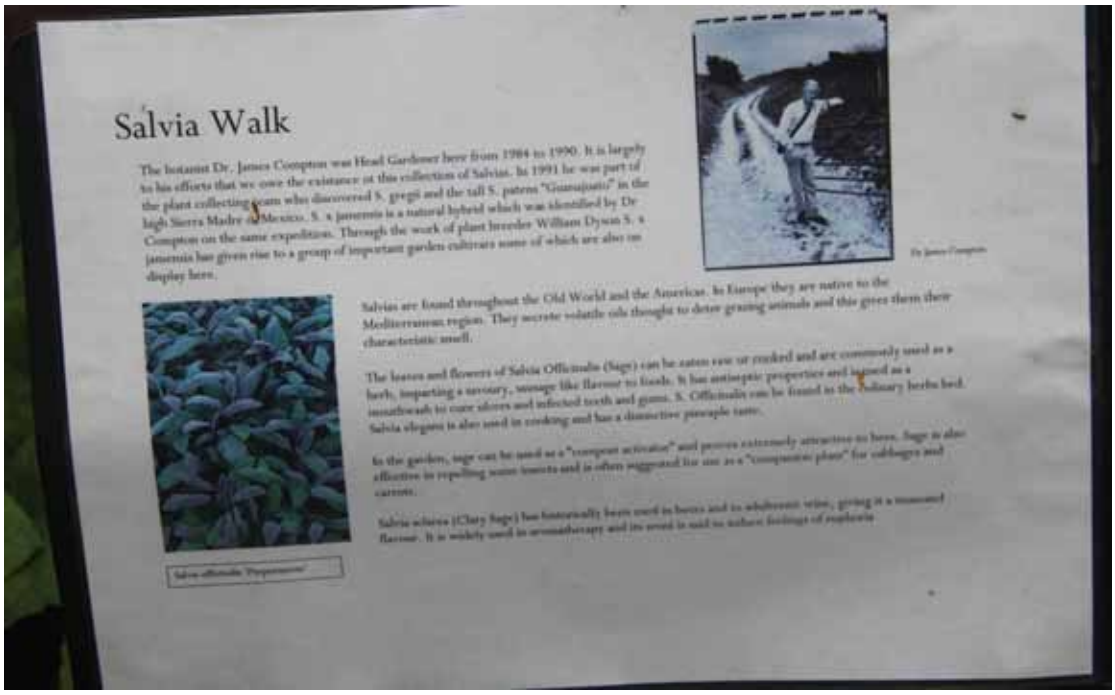

'HEMLOCK'
CONIUM MACULATUM
APIACEAE EUROPE N. AFRICA S.W. ASIA
Contains alkaloids

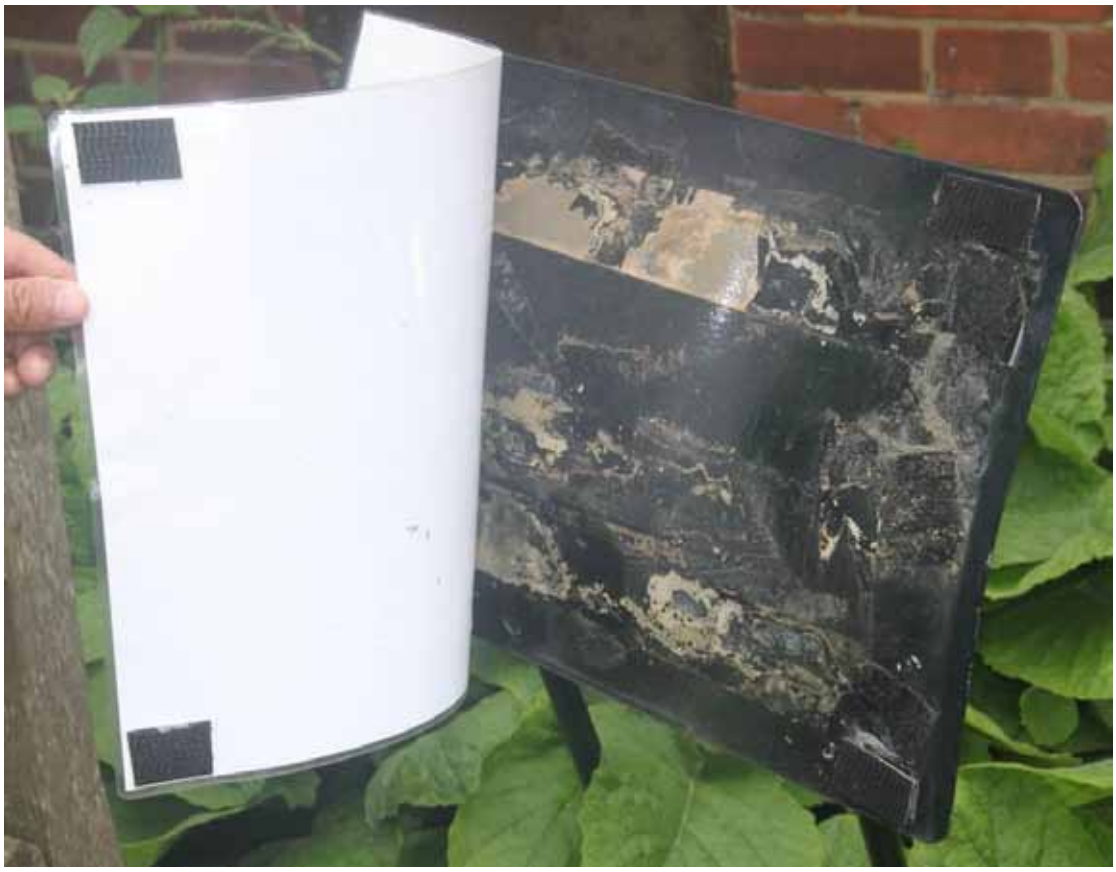

'OPIUM POPPY'
PAPAVER SOMNIFERUM
PAPAVERACEAE EUROPE N. AFRICA S.W. ASIA
CONTAINS ALKALOIDS


98-53
GR
JUGLANS
/ F2 FROM
SHELL NO. 2 /
-K. DOOLEY, IN


Fletcher Building
Science Buildings
Lecture Theatre


Chinese Hillside
Rock Garden
Caledonian Hall
Pond
John Hope Gateway
Botanics Shop
Copse
Terrace Cafe
West Gate
Inverleith House


Salvia Walk
The botanist Dr. James Compton was Head Gardener here from 1984 to 1990. It is largely to his efforts that we owe the existence of this collection of Salvias. In 1991 he was part of the plant collecting team who discovered S. gregii and the tall S. patens "Guanajuato" in the high Sierra Madre of Mexico. S. x jamensis is a natural hybrid which was identified by Dr Compton on the same expedition. Through the work of plant breeder William Dyson S. x jamensis has given rise to a group of important garden cultivars some of which are also on display here.
Dr James Compton
Salvias are found throughout the Old World and the Americas. In Europe they are native to the Mediterranean region. They secrete volatile oils thought to deter grazing animals and this gives them their characteristic smell.
The leaves and flowers of Salvia Officinalis (Sage) can be eaten raw or cooked and are commonly used as a herb, imparting a savoury, sausage like flavour to foods. It has antiseptic properties and is used as a mouthwash to cure ulcers and infected teeth and gums. S. Officinalis can be found in the Culinary herbs bed.
Salvia elegans is also used in cooking and has a distinctive pineapple taste.
In the garden, sage can be used as a "compost activator" and proves extremely attractive to bees. Sage is also effective in repelling some insects and is often suggested for use as a "companion plant" for cabbages and carrots.
Salvia sclarea (Clary Sage) has historically been used in beers and to adulterate wine, giving it a muscated flavour. It is widely used in aromatherapy and its scent is said to induce feelings of euphoria



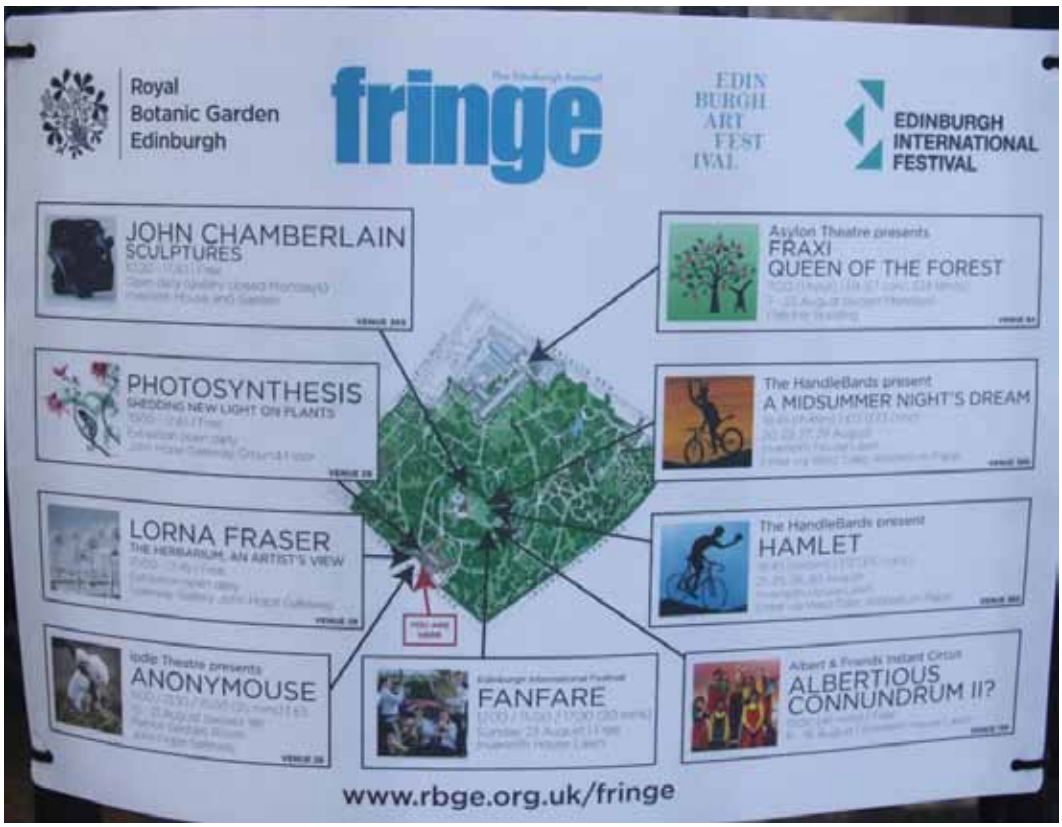
18 科学研究展示

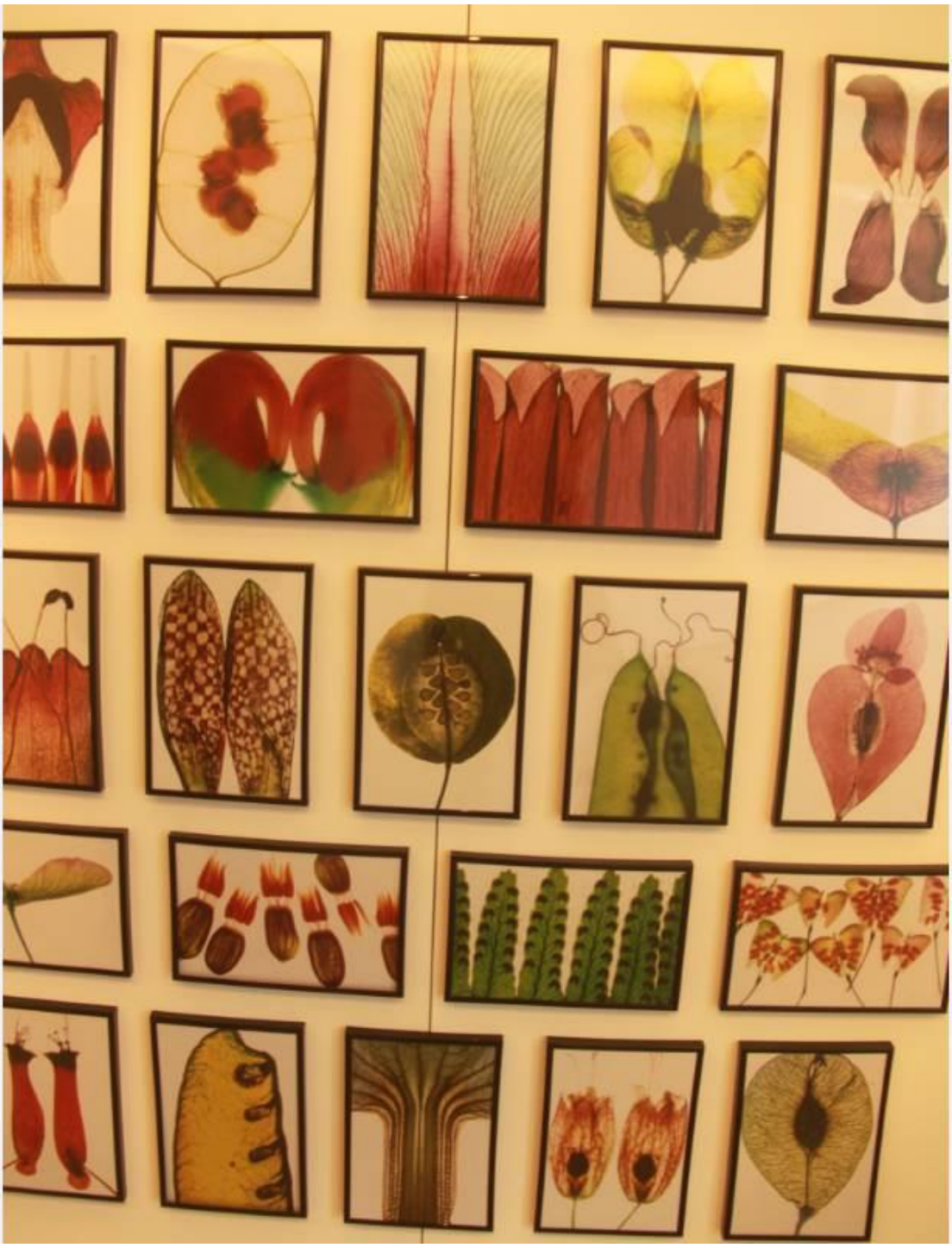
爱丁堡植物园会有一些和地方大学及科研机构合作研究的项目，有些在园区进行展示，如效果明显的杂交实验。本园员工也有些实验在园区展示，如有些繁殖套袋实验。


Royal
Botanic Garden
Edinburgh
Evolution Garden
Experimental plot: Adaptation
This experimental plot contains hybrids between two plants that are adapted to different degrees of soil moisture. Wood avens is found in drier soils and water avens is associated with permanently water-logged soils.
We are working with researchers at the University of Edinburgh to monitor how the varied mix of characteristics inherited from the parent species affects survival.
Wood avens
Water avens

19 公众教育

爱丁堡植物园常年都有很多公众教育的活动，有些是常规活动，如寻找特定植物。有些是特定时段，特定季节的项目，如爱丁堡艺术节期间举行的一些项目。有些需要另外交钱，有些免费。





AN ABUNDANCE OF LIFE

Plant Diversity and Conservation

The Biodiversity Garden celebrates over 500 plant species including annuals, aquatics, bi-annuals, bulbs, climbers, herbaceous shrubs and trees. Today many plants and ecosystems are under threat from climate change and deforestation. Plants are essential for human well-being, for the well-being of other plants and animals and, indeed, for all life on Earth. The global conservation work of the Royal Botanic Garden Edinburgh is part of an international partnership to help protect this wealth for future generations.

As you look across the Biodiversity Garden consider the following facts:-

1. All life is ultimately dependant on plants.
2. Plants take energy from the Sun and convert it into foods required by other life forms.
3. Plants are essential in looking after the atmosphere we breathe, producing oxygen and taking up carbon dioxide.
4. Plants are the most diverse form of life on Earth.
5. Plants provide a myriad of habitats, in which other organisms live and on which they depend.
6. Plants stabilise soils, prevent erosion and distribute water around the global ecosystem.
7. Plants are essential for human life, providing food, materials, medicines, beauty and joy.
8. Plants are one of the oldest forms of life on Earth.

In addition, think of all the different leaf shapes, flowers, colours and textures you have seen so far on your visit to the Biodiversity Garden. Ask how many plants or plant products you have used today. Each and every one of us is dependent on the plant kingdom. View it with a 'Sense of Wonder' and treat it with the respect it deserves.

GEOLOGY TRAIL

Limestone

This is limestone that formed during the lower part of the Jurassic geological period about 195 million years ago. At that time much of the area we know today as central and west Scotland lay under a shallow sub-tropical sea rich with marine life. The limestone represents layer upon layer of accumulated carbonate mud and the remains of sea creatures including molluscs, the shelly remains of which can be seen in the rock. On the land dinosaurs would have been an important part of the terrestrial ecosystem, and occasionally have been preserved as fossils in the mud.

"Wee, modest, crimson-tipped flow'r, Thou's met me in an evil hour; For I maun crush amang the stours Thy slender stem: To spare thee now is past my pow'r, Thou bonny gem."

Robert Burns, poet and songwriter, 20th April 1786

九 结语

1，每个植物园都大体分为几个大的植物分区，然后再在每一分区划分为若干小区，每一特定小区有的制作了定植图，卫斯理植物园尤其典型。

2，大型专类园的指示牌规格差不多，统一都是木质制作，同一专类园在不同入口安置同一标题指示牌，但标题下内容不同，如卫斯理植物园药园不同入口的指示牌。

3，不同植物的知识标牌规格、颜色基本一致，插干都是铝质，标牌都是黑底白字，简洁，没有本园的 logo，没有用途功效。

4，工作人员在园区工作必定身穿带有本园标志的工作服，以和园区协调一致，使园区整洁有序。

5，员工 7：30 开始上班，提前打扫园区，方便游客参观，这是一种高要求的服务态度。遇到大风暴来临，预先在各种媒体告示，关闭园区，直到风暴结束，这也是一种更高要求的服务态度。

6，员工工作负责。一天我们和威廉一起工作，我特意观察他工作是否认真，我发现他们园地整理非常认真，我们没有清理干净的地方，威廉立即清理。有一天，我有意指着一个游客丢的塑料袋向双手拿着工具的他示意，他看到我手指之处是一个饼干塑料袋，马上蹲下放下工具，立即捡起来塞进自己的裤袋，因为当时没有带盛放捡垃圾的塑料桶。钦佩之心油然而生。因为动作太快，也不好意思拍照。

7，恶性杂草必须分开。除杂草很讲究科学性，很容易扩散的恶性杂

草，分开放，这点对园区管理很重要。

8，植物资料随时更新。种了几种植物，当场就做了记录，因为园地都划分为具体的 beds，都有编号，所以植物找起来很容易。新种的东西，另外一个没有参加种的同事去插牌根据记录及分区图也很容易找到。

9，植物园公众服务意识强，把游客放在第一位考虑。如池塘水泵坏了，水无法循环，需要抽干池塘的水进行维修水泵，这个时候植物园会在池塘边放置一个说明原因并表示歉意的临时牌子，我问过几个游客，他们说当他们看到这些解释的临时牌子，他们感到很被尊重。另外，植物园的安全意识也非常强，凡是有妨碍公众的临时作业都会很正式地把作业区用警示绳、警示牌围着。凡是有可能发生摔跤、溺水的池塘都备有紧急救生器材。

还有很多地方没有一一列出，如苏格兰本土植物区、中国坡、有 100 多年历史的篱笆墙，等等。

在爱丁堡植物园和他们园艺师们一起工作 3 个月后，了解了他们的日常工作，和他们建立了深厚的友谊，加强了和他们今后的联系。总之，这次学习收获颇多。但感觉时间短短暂，还有很多没有被我们发现而值得我们学习的地方，其园区景观格调之高，特别是园区景观所表现出来的精神面貌，令人深思。

十 致谢

感谢中国植物园联盟及华南植物园提供这次学习的机会！

感谢英国相关联络人的帮助！

感谢班戈大学、邱园、爱丁堡植物园相关工作人员的帮助！

感谢爱丁堡植物园众多园艺师解答问题！