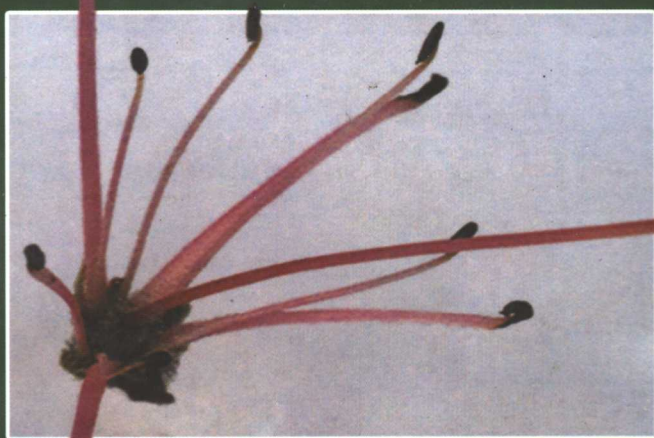


THE ILLUSTRATED ENCYCLOPEDIA
OF THE WORLD FAMOUS AZALEAS

世界名贵杜鹃花图鉴

沈荫椿 编著



中国建筑工业出版社

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序



余生有幸，年少时享有花木之乐。盖家严沈公渊如先生钟爱花卉树木，营建花园。凡兰蕙、夏荷、秋菊、冬梅、山茶、杜鹃之类四时连放，满园盛开。诚哉，会仙葩之芳园，叙天伦之乐事。

余祖籍无锡。家严承传祖辈文化，历几十年悉心研究花卉、盆景艺术，终成全国著名之园艺家。余自幼耳濡目染，更秉承身传言教，对花木感情随马齿徒长而加深之，虽称不了“家”而自侃为“花癖”也。

家严沈公渊如早于20世纪20年代，即从日本引进各类杜鹃。如久留米、雾岛、平户、皋月以及比利时杂交杜鹃，计有200多种。其目的非仅观赏而是将中外花卉文化融合，进行有性杂交培育。家严竭毕生精力于花木，其科研之辛勤有工作日记为证，详细记载一批批成功之个例(见本书亚洲杜鹃一章所刊家严工作日记残照)。

历史之公正令人心服。中国建筑工业出版社1985年出版的沈渊如、沈荫椿著《杜鹃花》，记载品种达246种，由此奠定沈公渊如为中国20世纪20年代栽培、杂交培育杜鹃之先导者、杜鹃分类先驱者之基础。北京植物研究所余树勋教授著《杜鹃花》、无锡市园林局工程师黄茂如著《杜鹃花》等专著，皆屡次记载家严引进杜鹃培育、分类等成就。后裔之我向园艺界学者致谢。

历10年“文革”，家严被冲击而亡，人去物非，故园荡然无存，花木散失殆尽。后政策逐步落实，流失之新老品种承父辈故旧、社会同好着力搜集赠还，虽后院破残，也略见恢复生机。

18年前，承友升国际公司董事长沈坚白先生(与我无亲缘关系)、沈夫人郭志娴女士鼎力襄助，余于1984年10月去国。抵美后花癖如故，四出寻访。多年与欧美、大洋洲、日本等杜鹃界人士或花圃联络，益长知识，渐开眼界，专心读书并加以实践，能心慰者竟择优收有200多品种。尤以耐寒常绿杜鹃、耐晒太阳杜鹃、耐湿杜鹃、爬地杜鹃、观叶杜鹃为贵。家严在世时梦寐以求之复瓣黄杜鹃(现收集到的只是落叶性品种)，桔黄色、茄紫色、淡绿色、模糊色等复瓣品种尤为新奇，足以告慰家严在天之灵。

年岁易逝，悠然数十年，余已皤然一翁。追昔抚今，无所业绩，惟身在海外，心乃随家严教诲，不断学习研究，于杜鹃类学识方面略有积累。今特编写本图鉴，还知恩图报之愿。如若图鉴能为故园园艺界捎去世界新资料，或稍有所得，则余之愿践矣。此亦是沈坚白先生夫妇之功也。

本图鉴收集欧洲、北美洲、大洋洲、亚洲各种杜鹃花800多个品种。受篇幅所限，尚有数百个品种只能待有续集再予补充。

在编写本书过程中，承国际园艺界各方人士支持，如闻名于国际杜鹃界的美国怒起乌苗圃(Nuccio's Nursery)业主Tom, Tim, Julius Nuccio三兄弟，美国踯躅协会前主席 Harold Greer先生，美国杜鹃花协会主席Robert Lee先生，美国杜鹃花育种家Allen Cantrell先生，David F. Sauer先生，Ellie Sather先生，D. Philip Waldman先生，

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Rothschild 先生，学者 Jim Inskip 先生，Martha Prince 女士；

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德国 Walter Schmalscheidt 教授；

澳大利亚踔躅协会秘书长 Barry Stagoll 先生，学者 Richard Francis 先生，A.W.Headlam 先生，J.Whitelaw 先生，Peter Valder 教授；

新西兰踔躅协会新品种登录组评审人 M.D.Cullinane 先生；

比利时杜鹃花最大生产公司 Luc Block 先生，比利时国立皇家图书馆 Lucien Debersaques 先生；

日本苇书房三原浩良先生等。

另外，又承 Matilda Yan Young 和 Deamer, Deidra 协助与国际园艺界联系；王彩云教授翻译文章；胡惠蓉教授绘画；蔡乐毅先生偕夫人李洪霞女士作电脑工作，在此一并致谢。

谨将本图鉴喻为一束永不凋谢的杜鹃花，敬献给慈父、恩师沈公渊如先生！余续继祖辈文化耳。

沈荫椿写于美国加州南旧金山寓所

2003 年 3 月 6 日



本书作者与父沈渊如先生合影
摄于 1957 年仲春家园花厅

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Without the help of many friends from various parts of the world where azaleas flourish, I would not have been able to write this comprehensive account.

First and foremost my thanks go to the following individuals who allowed me to include many photos of new hybrid azaleas that they have cultivated. Robert Lee, chairman of the American Azalea Society, and Tom, Tim and Julius Nuccio of Nuccio's Nursery in Altadena, California.

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My appreciation also goes to Matilda Yuan Young and Deidra Deamer for their assistance in translations and communication with the horticulturists worldwide. And last, but not least, my thanks to Ronnie Tsaio and Hong Xia Li for their computer skills.

Yin-Chun Shen

第一章 杜鹃和踯躅

怎样区别踯躅(Rhododendron)和杜鹃(Azalea)?

[澳大利亚] 彼得·梵尔德(Peter Valder)

“瞧，多么可爱的蓝杜鹃(azalea)呀!”他们说，“我以前可从未见过这种颜色!”但究竟如何解释清楚安达踯躅(*Rhododendron angustinii*)或‘蓝钻石’(‘Blue Diamond’)，以及其他一些蓝色品种不是杜鹃呢?诚然，踯躅与杜鹃这两者之间外表似乎相似，而实际上大多数人已认识到两者的概念是有很大的区别的。落叶杜鹃和常绿杜鹃有别，它们与大多数踯躅也不相同。那杜鹃究竟是什么呢?很遗憾，答案并不那么简单。在这里，你暂且不要去解释它，还是先来了解一些植物学的历史知识吧!

众所周知，18世纪瑞典植物学家林奈以雄蕊数目为基础，并参考其他相关特征，提出了一个分类系统，称之为“林奈有性系统”(Linnaeus's Sexual System)。这个系统算不上一个很好的系统，用起来相当不方便。继该系统之后，他将他已知的踯躅种划分为两个属：雄蕊数为10的种，放在踯躅属，如*R.ferrugineum*(锈鳞杜鹃)，*R.hirsutum*(粗毛杜鹃)，*R.dauricum*(劳里杜鹃或野杜鹃)和*R.maximum*(伟杜鹃或樟叶杜鹃)，雄蕊数为5的种，则放入杜鹃属，如*A.indica*(皋月或夏鹃)，*A.pontica*(黑海杜鹃)，*A.viscosa*(沼泽杜鹃)，*A.lutea*(黄杜鹃)，拉普兰杜鹃(*A.lapponia*)和匍匐杜鹃(*A.procumbens*)。林奈的命名与现代命名对照如下：

编号	林奈的命名	现代命名
1	<i>A.indica</i>	<i>R.indicum</i>
2	<i>A.pontica</i>	<i>R.luteum</i>
3	<i>A.viscosa</i>	<i>R.viscosum</i>
4	<i>A.lutea</i>	分为 <i>R.calendulaceum</i> (火焰杜鹃)和 <i>R.periclymoides</i> (裸花杜鹃)两个种
5	<i>A.lapponia</i>	<i>R.lapponicum</i>
6	<i>A.procumbens</i>	<i>Laiseleuria procumbens</i>

在以上这些种中，第1个种为常绿杜鹃，接下来的3个种为落叶杜鹃，第5个种为有鳞的踯躅，雄蕊数为5；最后一个种为来源于拉普兰(Lapland)的匍匐性灌木，现在根本不包括在踯躅属中，而另命名为*Laiseleuria procumbens*。这是很具讽刺性的，因为林奈是基于希腊词“azaleas”而命名杜鹃属(*Azalea*)植物的。azaleas表示“干燥”之意，指杜鹃属的植物种起源于干燥的地方。

虽然植物学家们把林奈的杜鹃种(不包括*A.procumbens*)定名为相应的踯躅属植物，但园艺家和苗圃工作者仍能将它们区分开来。

遗憾的是，仍然存在一些踯躅组的区分问题。有一点可以肯定：所有杜鹃(azalea)都属于踯躅(rhododendron)，而仅部分踯躅是杜鹃。

既然如此，你可能要问，两者究竟怎样区别呢?很显然，仅看雄蕊的数目是不可靠的。事实上，要区别两者的不同点并不容易。

首先，要观察叶片，特别是要用



显微镜放大一定倍数来观察叶背面有无鳞片。如果有鳞片,则不是杜鹃,但仅1/600左右是有鳞片的踯躅种,也没有哪个种符合一般意义上的踯躅概念。安达杜鹃(*R. angustinii*)以及大多数与杜鹃相似的踯躅都有鳞片。

如果叶背无鳞片,那么,该种可能是杜鹃,也可能是‘普通型’踯躅(‘ordinary’ rhododendron)。如果你要从各个植物学性状上进一步区别清楚,还必须用显微镜观察植物体被毛的情况。‘普通型’踯躅的枝上有毛,而杜鹃绝对没有。

然而,大多数‘普通型’踯躅之间十分相似,而杜鹃组内相互间可能不太相关。例如,落叶杜鹃与常绿杜鹃似乎很容易区别,而且一些奇特的亚热带踯躅比其他一些踯躅更接近杜鹃。植物学家要完全搞清楚整个分类问题还需时日。

与此同时,如果你认可踯躅属(*Rhododendron*)下划分的4个组,那么你在区分这些种时基本上不会出什么差错。这4个组即:1.‘普通型’踯躅(‘ordinary’ rhododendron); 2.无鳞踯躅(non-scaly rhododendron),例如*R. ponticum*和杂种‘粉珍珠’(‘Pink Pearl’); 3.热带有鳞踯躅(tropical scaly rhododendron),如vireyas中的*R. lochlae*种; 4.‘普通型’有鳞踯躅(ordinary scaly rhododendron),如安达杜鹃(*R. angustinii*, *R. nuttanii*),另加上杜鹃组(azaleas)。而且,如果你是杂交育种学家,你会发现,这几组

组内种间杂交通常容易成功,组间种间杂交则极少成功。因此,我们恐怕不能轻易说看到了真正的蓝色杜鹃,这也还需进一步考证。

杜鹃中不同类型杂交也很少成功。因此,旨在得到常绿黄色杜鹃的育种家也还没有太大的进展。即便如此,落叶杜鹃与‘普通型’踯躅之间杂交产生了有用的园林植物。‘Broughtonii aureum’中的‘踯躅鹃’(‘azaleodendrons’)就是著名的例子。但是,这些种好像不育,因此,并没有在育种上进一步应用。

本文作者彼得·梵尔德(Peter valder)以甲等奖学金和大学勋章获悉尼大学学士学位和剑桥大学博士学位后,回国多年致力于(澳大利亚)新南威尔士(New South Wales, NSW)农业部植物病理学研究。之后,成为悉尼大学生物科学院的真菌学家。

随着对植物的接触,以及受当地植物爱好者的影响,激发了他对澳大利亚植物的浓厚的兴趣。因此,他很幸运地成为一名普通的植物学教师,同时也从事真菌方面的工作。他还是NSW林奈学会和澳大利亚农业科学院的负责人(office bearer)。不仅如此,他还涉足澳大利亚植物和园艺,参与“科学ABC”、“科技书架”等电视节目制作。为杂志撰写文章,参加有关方面组织的植物与园林会议。

他同时为电影《神奇而多样的植物》撰稿和配音,该片于1981年首次在悉尼国际植物学大会上上映。1984年,他为加拿

大和美国的大学和植物园作导游,宣传澳大利亚植物。他在澳大利亚大陆上有很好的植物学基础和阅历。

不仅如此,他对家庭花园也有浓厚的兴趣,威尔逊山(Mount Wilson)的露若(Nooroo)成为澳大利亚新南威尔士最受人崇拜的花园之一。该花园建于1880年,1917年由彼得的祖父购买。他的父亲第一次世界大战回来后,就一直生活在此,直至1976年去世。随后,他和他母亲分享这份财产,直至1992年卖掉。

由于对造园的兴趣,他曾到过印度尼西亚、马来西亚、泰国、老挝、缅甸和中国等许多国家,寻找适合于澳大利亚气候的植物。此外,他还参观了英国、北美、法国、意大利、西班牙、日本和韩国的园林,收集了大量的图片用来进行讲学和写作。

1995年,他以英文撰写了第一本关于紫藤属(*Wisteria*)的书,解决了很多种与品种的命名上有争议的问题。为完成此书稿,他参观了北美、中国和日本,进行了许多基础研究工作。他最近又在撰写关于中国园林植物方面的书。

悉尼皇家植物园对他的天赋和他在植物与园艺方面的奉献给予了高度承认和赞赏,1995年,他获得了澳大利亚园艺学会的荣誉勋章。

彼得是澳大利亚杜鹃花协会的终身会员,2000年,由于他对协会工作的特别贡献和努力工作,协会因此授予他金奖。

(中国武汉华中农业大学园艺林学学院王彩云教授译)

WHEN IS A RHODODENDRON AN AZALEA?

By Peter Valder, Australia

“Look at that lovely blue azalea”, they say, “I’ve never seen one that colour before”, How on earth can one begin to explain that *Rhododendron augustinii*, or ‘Blue Diamond’, or another blue variety, isn’t an azalea. It certainly looks like one and bears little resemblance to most people’s concept of a rhododendron. Anyway what is an azalea? After all, the deciduous and evergreen azaleas look as different from one another as they do from most rhododendrons. Unfortunately there isn’t an easy answer, so you must either stop reading now or be prepared to put up with a bit of botanical history.

In the 18th century the Swedish botanist Linnaeus devised a system of classification of plants based on, among other things, the number of stamens. This system of classification, which turned out not to be a good one, was known, rather awkwardly, as Linnaeus’s Sexual System. Following this system he divided the rhododendrons known to him between two genera. In his genus *Rhododendron* he placed the species with ten stamens (*R. ferrugineum*, *R. hirsutum*, *R. dauricum* and *R. maximum*) In the genus *Azalea* he placed those with five stamens (*A. indica*, *A. pontica*, *A. viscosa*, *A. lutea*, *A. lapponia*, and *A. procumbens*). Their modern names are:

Linnaeus’s names	Modern names
<i>A. indica</i>	<i>R. indicum</i>
<i>A. pontica</i>	<i>R. luteum</i>
<i>A. viscosa</i>	<i>R. viscosum</i>
<i>A. lutea</i>	split between <i>R. calendulaceum</i> and <i>R. periclymoides</i>
<i>A. lapponia</i>	<i>R. lapponicum</i>
<i>A. procumbens</i>	<i>Loiseleuria procumbens</i>

Of these the first is an evergreen azalea, the next three are deciduous

azaleas, the fifth is a scaly rhododendron that happens to have only five stamens, and the last is a prostrate shrub from Lapland, which is now not included in *Rhododendron* at all and is called *Loiselenria procumbens*. This is ironic because Linnaeus based the genus on this last plant, deriving the name *Azalea* from the Greek word ‘azaleos’, meaning ‘dry’, in allusion to its occurrence in dry, places.

In spite of the fact that botanists have transferred Linnaeus’s species of *Azalea* (other than *A. procumbens*) to the genus *Rhododendron*, where they properly belong, the name has stuck. As a result this distinctive group of rhododendrons are kept apart by gardeners and often by nurserymen.

Unfortunately this is a little awkward since there are other equally distinctive groups. However what it amounts to is that all azaleas are rhododendrons but only some rhododendrons are azaleas.

Well then, I can hear you asking, how do you decide which is which? The number of stamens certainly isn’t a reliable guide. In fact telling the difference isn’t at all easy.

First of all you should look at the leaves, particularly the under-surfaces, with a microscope or magnifying glass and see whether or not scales are present. If they are present then it is not an azalea but one of the 600 or so scaly rhododendron species, none of which fits the popular concept of a rhododendron either. *R. augustinii* and most other azalea-like rhododendrons have scales.

If scales are absent then it is either an azalea or an ‘ordinary’ rhododendron. From this point on you can usually tell the difference by using commonsense. But, if you really want to go all botanical, then you’ll need a microscope to look at

the hairs these plants usually bear. The 'ordinary' rhododendrons produce some hairs which branch, the azaleas never do.

Whereas most of the 'ordinary' rhododendrons bear a considerable similarity to one another, this is not true of the azaleas, a group into which have been placed unrelated types. The deciduous azaleas seem very distinct from the evergreen azaleas, for instance. And there are some odd subtropical rhododendrons which seem more closely related to the azaleas than to other types of rhododendron. It will be some time before the botanists get the whole thing sorted out.

In the meantime you won't be far wrong if you recognise four main groups within the genus *Rhododendron*—ordinary, non-scaly rhododendrons (e.g. *R. ponticum*, and the hybrid 'Pink Pearl', etc.); tropical scaly rhododendrons (the vireyas, e.g. *R. lochiaie*); 'ordinary' scaly rhododendrons (e.g. *R. augustinii*, *R. nuttallii*); and the azaleas. And if you are a hybridist you will find that, while crosses between species within each of these groups are often successful, crosses between species from different groups rarely are. So it will probably be some time yet before we see a real azalea which is blue.

Within the azaleas themselves, crosses between distinct types are rarely successful either. As a result breeders aiming to produce yellow evergreen azaleas have been making slow progress too. Even so there have been crosses between deciduous azaleas and 'ordinary' rhodo-

dendrons which have produced useful garden plants. These are the so-called 'azaleodendrons', of which 'Broughtonii aureum' is a well-known example. These, however, seem to be sterile, and thus have not been used in further breeding.

Peter Vaider graduated BScAgr from the University of Sydney with first class honours and the University Medal before going on to Cambridge to study for his PhD. On his return he worked for some years as a plant pathologist with the NSW Department of Agriculture before joining the School of Biological Sciences of The University of Sydney as a mycologist.

Brought up in the bush, his interest in the Australian flora had been stimulated by local amateur botanists. Thus he was pleased to become involved in the teaching of general botany in addition to his mycological work. He has also been an office bearer of the Linnean Society of NSW and of the Australian Institute of Agricultural Science. As well as this he has drifted into the popularising of Australian botany and horticulture, making appearances on television the ABC Science show and Science Bookshop, writing for magazines and addressing meetings of organisations interested in plants and gardens.

He both wrote and narrated the film 'A Curious and Diverse Flora', first shown at the 1981 International Botanical Congress held in Sydney in 1984 he undertook a lecture tour of universities and botanic gardens in Canada and the United States, speaking about the Australian flora. He thus has had considerable experience in making known the extraordinary flora of this isolated continent.

As well as this he took a great interest in his family's garden, Nooroo, Mount Wilson, N.S.W. which became one of Australia's most admired gardens. This property was established in 1880 and was bought by his grandfather in 1917. His father lived there from the time of his return from the First World War until his death in 1976, following which Peter Valder shared with his mother the responsibility of maintaining the property until its sale in 1992.

His interest in gardening has taken him to Indonesia, Malaya, Thailand, Laos, Burma and China looking for plants suitable for the Australian climate, in addition he has visited gardens in Britain, North America, France, Italy, Spain, China, Japan and Korea, accumulating photographs with which to illustrate his lectures and writings.

In 1995 he wrote the first book in any European language about the genus *Wistaria*, resolving many of the nomenclatural problems associated with the species and cultivars, having visited North America, China and Japan to carry out the necessary research. His latest book deals with the garden plants of China.

In recognition of his gifts of plants to, and voluntary work for, the Royal Botanic Gardens Sydney, he was made their first Honorary Horticultural Associate in 1995, and in 1996 was awarded the Medal of the Order of Australia in recognition of his contribution to botany and horticulture in this country.

Peter Valder is a Life Member of the Australian Rhododendron Society, and in 2000 was awarded the Society's Gold Medal for his distinguished contribution to the work of the Society and the pursuit of its objectives.

踯躅(Rhododendron)与杜鹃(Azalea)之间有什么不同?

[美国] 哈罗德·E·格里尔(Harold E. Greer)

首先也是最重要的,一切杜鹃属于踯躅属(Genus Rhododendron)。杜鹃是踯躅属中单纯一群(实际上可分两类,一为常绿杜鹃,另一为落叶杜鹃)。凡杜鹃不易与踯躅杂交。

踯躅属分为两个群,一群为有鳞片(叶片覆有鳞片);另一群为无鳞片(叶片没有鳞片),称为杜鹃。

如上所述,杜鹃可分为落叶和常绿两类,落叶类的叶丛在冬天全部凋落,而常绿类的叶丛,凡春天生发的叶片在冬季脱落,凡在夏季萌发叶片都留存越冬,这称叶二形,或春生叶和夏生叶。春生叶较薄,色淡绿,叶片比较大,散生枝上;而夏生叶在初夏舒展,叶片较厚,色泽深绿,叶丛簇聚枝梢。

凡称杜鹃者都属于踯躅属中两个亚属,一为羊踯躅亚属(Subgenus Pentanthera),这类植物统称落叶杜鹃;另一为映山红亚属(Subgenus Tsutsusi),这类植物统称常绿杜鹃。所有踯躅则归纳入另外6个亚属内,其中至关重要者,常绿无鳞踯躅亚属(Subgenus Hymenanthus)的叶片普遍具有典型踯躅大叶片,没有鳞片;而有鳞踯躅亚属(Subgenus Rhododendron)的叶片普遍较小,有鳞片,因此,这类植物看上去很容易与杜鹃相混淆,而杜鹃是没有鳞片的。

在两个亚属中有许多种称杜鹃,它们的雄蕊多过5枚,而杜鹃只有5枚雄蕊。踯躅普遍有10枚或更多雄蕊,花朵每片裂片计有2枚雄蕊。通常以雄

蕊数为5枚者称为杜鹃,然而,这不是识别是否是杜鹃最好方法,特别要叶片没有鳞片。绝大多数杜鹃为单瓣花、5裂,但是,也不一定,亦有许多杜鹃呈复瓣或双套(即2个漏斗状花筒串套一起)。而在踯躅中只有少数呈复瓣花。

我们通常称杜鹃的叶片比称为踯躅者为薄,绝大多数(并非绝对)踯躅都是常绿性。

杜鹃有毛被(即叶毛与叶面平行着生),特别在叶背沿着主脉延伸,尤其,许多常绿杜鹃用肉眼就容易看清楚,如用放大镜或单片透镜更能看清叶毛是不分枝的,呈扁平倒伏着生,或呈薄片状。而踯躅的叶毛呈圆柱形。

杜鹃由于在原生地条件下形成习性,它比踯躅耐热。羊踯躅亚属绝大多数原生在北美东南地区,那里夏季温暖湿润。而映山红亚属绝大多数原生在中国南方和台湾地区、日本,在这些地区夏天炎热、潮湿。踯躅原生地区在夏季气温凉快。鉴于这些原因,杜鹃在中国和日本局部温暖地区花园中已生长了几个世纪。杜鹃在美国南部短期温暖地区亦能生长。

本文作者系美国踯躅协会前任主席哈罗德·E·格里尔(Harold E. Greer),他出版过许多有关踯躅专著和文章,其中最为著名的是《现有的踯躅种和杂交种入门书》(Guidebook to Available Rhododendrons Species and Hybrids)。

沈荫椿译

What is the Difference between a Rhododendron and an Azalea?

By Harold E. Greer, Eugene, Oregon, U. S. A

First and foremost, all azaleas belong to the *Genus Rhododendron*. They are simply a group (actually two groups, evergreen and deciduous) of rhododendrons that do not hybridize readily with other rhododendrons.

The entire *Genus Rhododendron* can be divided into two groups of plants, the lepidotes (plants with scales on their leaves) and the elepidotes (plants that do have scales on their leaves). The plants we commonly call azaleas, are always elepidotes.

As mentioned above, there are two groups of azaleas, the deciduous and evergreen, those that lose their leaves in the winter, and those that do not, though even the "evergreen" azaleas lose a large percentage of their leaves in the winter, losing all those grown in the early spring and only keeping those that grew in summer. This is described as having dimorphic leaves, or spring and summer leaves. The spring leaves are thinner, lighter green and generally larger and scattered along the stem. The summer leaves which unfold in early summer are thicker, darker green and are clustered on the end of the stems.

The plants commonly called azaleas belong to two subgenera in the *Genus Rhododendron*. The *Subgenus Pentanthera*, which are the plants we generally call "deciduous" azaleas, and the *Subgenus Tsutsusi* which are the plants we generally call "evergreen" azaleas. All other rhododendrons are placed in six other subgenera; most important being the *Subgenus Hymenanthus*, these are the generally larger leaved "typical" rhododendrons and are elepidote (not scaly), and the *Subgenus Rhododendron*, which are generally smaller leaved and are lepidotes (scaly). Plants in the *Subgenus Rhododendron* look like and are often confused with azaleas, with their small leaves, but they are lepidotes (scaly) which separates them from azaleas which are always elepidotes (non scaly).

While there are many species in the two subgenera called azaleas that have more than five stamens in the flower, many plants we commonly call azaleas have five stamens, while other rhododen-

drons generally have 10 or more stamens, two for each lobe (petal) of the flower. While this is certainly not a fool proof method of telling whether a plant is an azalea, having five stamens is most common, especially if the leaves are elepidote (non scaly). Most azaleas with single flowers also have five lobes in the flower, but not always. Also there are many double azalea flowers or what is called hose-in-hose flowers (a flower within a flower), while we see very few double rhododendron flowers.

Plants we commonly call azaleas generally have thinner leaves than those we know commonly as rhododendrons and most (though not all) rhododendrons are evergreen.

Azaleas tend to have adpressed hairs (hair that grows parallel to the surface of the leaf). This is particularly true along the midrib of the undersurface of the leaf and is easily seen on many of the "evergreen" azaleas. While the hairs are visible to the naked eye, you would need a magnifying glass or hand lens to see that the hairs are never branched and are flattened or laminated and not cylindrical as is seen in other rhododendrons.

The plants we call azaleas tend to tolerate hotter climates than rhododendrons. This is true because of the areas where they are generally native. The *Subgenus Pentanthera* is mostly native in southeastern North America where the summers are warm and wet. The *Subgenus Tsutsusi* is mostly native in southern China, Taiwan, and Japan, again an area where there are hot, wet summers. The plants we call rhododendrons tend to be native in areas with cool summer temperatures. While this is not always true, it is the reason why azaleas have been grown in gardens for centuries in the warm parts of China and Japan and for a lesser length of time in the warm southern United States.

Harold Greer is the former president of the American Rhododendron Society. He has published many books and articles on the rhododendrons, best known among these is his *Guidebook to Available Rhododendrons Species and Hybrids*.

第二章 杜鹃的生态习性和形态特征

野生杜鹃大都生长在山区的稀疏丛林之中，或岩畔溪谷，或山坡丘麓等，以及丘陵地带，平原则少见；常

群生烂漫成片，有常绿、半常绿和落叶灌木或小乔木。

野生杜鹃由于分布地理环境和其间生态环境不同，其种类亦不同，因而，它们的习性和生态亦略异(详见续后章节)。

野生杜鹃花型，主要有漏斗形、钟形、辐射形、碟形等，以单朵或多朵组成伞形花序；花之色泽有白、紫、红、乳黄、金黄、粉红、砖红色、青莲色等，而在北美原生杜鹃自然杂交品种中常出现异色杂晕、杂缀。有些野生杜鹃花具有芳香(以美国原生杜鹃为多)。为两性花，有短梗，花冠通常五裂，亦有多裂，雄蕊一般为5枚，子房为5室。花期主要在春季，少数在夏秋期间。叶互生，全缘，常革质，少数为纸质；叶型有椭圆形、倒卵形、披针形、倒披针形、椭圆状披针形、线状披针形等；叶脉微凹，有粗细皱纹，叶两面有柔毛被或微细稀疏毛被。果实为蒴果，有卵形、椭圆形、矩圆形、圆柱形、扁球形、宽卵形等等不同形式。蒴果都耸立花萼之上。种籽有种翼或无，种脐及发芽孔处有簇状翼或突起，种皮有细纹槽，有的光滑，具光泽或无。蒴果成熟后果室自动开裂，成熟种籽多为暗褐色，未成熟种籽为浅黄褐色或淡黄色，但某些种类成熟种籽亦有为黄色或浅褐色。种籽细小，一般每粒大小：长度为1.7—4.0mm，



2-1 山区野生落叶杜鹃群盛花

Robert Lee 摄



2-2 野生落叶杜鹃在山岭漫布盛花

Robert Lee 摄



2-3 ‘火焰’杜鹃野生山林中

Allen Cantrell 摄



2-4 ‘满山红’野生于山麓混交林中

夏泉生摄



2-5 美国北卡州山林中自然杂交野生落叶杜鹃格雷戈里·鲍德(Gregory Bald)丛生情况

作者摄

宽度为0.4—1.3mm, 单粒重0.5—3.6mg。种籽无休眠期, 一般都在翌春气温20℃时播种, 如在北方气温较低地区必须有温室或冷床等设备, 方能育苗成功。

杜鹃根系为浅根性纤维性根群, 宜生长在富含有机质、排水良好的腐叶土壤中, 所以, 是典型酸性土壤植物。

自然野生种类大都分布在山区向阳窝暖林间或阴坡灌木丛间, 受林木蔽阴、庇护, 又有云雾湿气滋润, 所以能忍受高山冷湿, 或恶劣的气候与土壤的贫瘠。而驯化野生种和发展园艺杂交品种由于受平原地区栽培环境影响, 却不耐严寒, 尤畏高温和强烈日照, 但是, 有些新培育成阳光杜鹃和耐寒杜鹃则不受影响。

19世纪以来, 国际园艺界在培育杜鹃花研究工作方面作出了许多新贡献, 如用一些踯躅(rhododendrons)与不同落叶杜鹃(deciduous azaleas)或不同常绿杜鹃(evergreen azaleas)相互杂交, 培育出前所未有的‘踯躅鹃’((Azaleodendrons), 详见另一章); 另在常绿杜鹃与落叶杜鹃之间杂交, 常绿杜鹃之间异种杂交, 或落叶杜鹃之间杂交(包括异种杂交)等等都有显著成绩, 除培育出许许多多多姿异色品种外, 又有阳光杜鹃, 耐严寒杜鹃(包括常绿和落叶两大类), 以及垂枝性杜鹃、匍匐杜鹃, 各类既观叶又观花杜鹃, 甚至于育成腋生花序杜鹃。在色泽方面也有突破性出现, 如比利时杂交品种中出现了橙黄色复瓣品种; 在日本原生种杜鹃中开发出堇色复瓣微型品种; 在美国则培育出常绿性杜鹃中有了绿色单瓣、半复瓣; 美国和比利时培育出模糊色彩(大幅面异色相晕相杂)的比利时杂交杜鹃。在花型方面, 美国培育出辐射形、卷曲瓣、菊花式、蕊开形等。在耐寒品种方面, 常