中国热带野生花卉

WILD TROPICAL PLANTS IN CHINA

CHINA ESPERANTO PRESS

热带雨林的奇花 — 寄生花

Himalaya Sapria *(Sapria himalayana)*

—a rare flower found in tropical rain forests

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前　言

地球南北回归线之间的热带地区，大部分是海洋，有限的陆地除部分岛屿和南美亚马逊平原外，许多地方被沙漠覆盖，绿色植物比较贫乏，而处在北回归线南侧的亚洲部分地区和中国境内，则是另一番景象，那里江河纵横，山峦叠翠，生机盎然，宛如颗颗绿宝石镶嵌在大地上。

中国的热带地区东起东经123°附近的台湾省静浦以南，西至东经85°的西藏亚东、聂拉木附近。南段纬度在北纬4°（曾母暗沙），其北界蜿蜒于北纬21-24°之间，基本处在北回归线以南，由于受大气环流以及地形、地貌等诸多因素的影响，在西藏东南部，则升到北纬28-29°之间。

中国热带区域的地貌类型错综复杂，有冲积平原、丘陵、山地、高原、石灰岩峰丛、珊瑚岛等，地势从东到西逐渐上升。南海诸岛海拔100米以下，广东东部广布海拔150米以下的丘陵台地，广西多为海拔500-600米的石灰岩构成的峰林，云南东南部热带上限海拔为400米，滇西南达700米，滇西则上升到800米。在焚风(Fotu)效应影响下的金沙江、澜沧江等干热河谷中，纬度更靠北，其海拔上限达1700米。总的来说，中国热带植被基本包括了海南、台湾、广东、广西、云南和西藏等省、区的南部地区。中国陆地的热带雨林区域呈现从东南到西北蜿蜒曲折的斜长带状。

中国热带地区大都濒临海洋。在印度洋西南季风和南太平洋东南季风的影响下，气候湿热，降雨充沛，年平均气温在20-22°，≥10°C的年积温为7500-9000°C以上；年降雨量大多超过1500毫米，部分地区由于受地形影响，可高达5000毫米。这些地带土壤类型多样，植物生长发育良好。除南海诸岛受海浪及台风影响，自然植被发育较少外，其它许多地区如云南南部至东南部、海南岛、广西南部等地，其生物种类极其繁多，生物产量亦最高。这些地区属于世界三大热带雨林之一的东南亚热带雨林的北缘，由湿润雨林、季节性雨林、山地雨林和季雨林四个类型组成，统称为热带北缘雨林。

在中国的热带雨林中，森林生态系统保持最完整、生物资源最丰富、面积最大的原始林区当首推西双版纳。西双版纳土地面积只占国土总面积的1/500，高等植物却占全国总数的1/6，达5000余种，种类之多，居全国之冠，被誉为“植物王国”中的明珠。西双版纳地处横断山脉南部，地势北高南低。北部有哀牢山、无量山为屏障，阻挡了北来的寒潮；南部许多河谷便于西南季风伸入，高温、静风、湿度大。有效的水热配置，使西双版纳成为生物进化的摇篮，为热带花卉的生长发育提供了极好的条件。

和中国其它热带地区一样，西双版纳也属于古热带区。这个地区受第四纪冰川影响较小，古老的植物种类保存较多，在20个古热带的残遗属里，西双版纳就保存有12个属，其中有些还是现代植被组成的重要成份。根据植物属的地理分布性质归化统计，西双版纳有84.4%的属为热带分布型的植物。

热带雨林是地球上最大的生物基因库，也是物种最繁茂、结构最复杂、最生机勃勃的森林类型，在特定的、得天独厚的自然条件下，形成了与其它气候带森林截然不同的一些生物、生态学特征和特性。它们树木高大，群落层次结构复杂，从高达70多米的林中巨人到地上的苔藓、地衣，有5-6层之多，占满了整个空间。它们相互依存又各得其所，充满勃勃生机。发达的板状根支撑着巨大的树体，高高在上，粗壮的气生根，支柱根环绕母树，形成“独木成林”，各种大型木质藤本如手臂、如扁担，最粗的50厘米，最长的达100余米，上下缠绕，左右盘旋，蜿蜒于林间，将林内植物彼此相联；寄生、附生植物密集丛生，组成五彩缤纷的“空中花园”；“老茎生花”随处可见，多种榕属植物在枝干上结出了如玛瑙般的串串果实；那因自身繁衍而投靠它木，为生存竞争而致死对方的“绞杀”植物，在雨林中比比皆是；林中长满了大野芋(Alocasia macrorrhiza)、野芭蕉(Musa acuminata)等巨叶植物。这一切，把热带雨林组成了一座琳琅满目、令人眼花缭乱、千变万化的植物迷宫。

热带雨林还是一座大花园，花卉种类繁多，花型奇特，色彩艳丽，气味怪异，五彩缤纷，争艳斗奇。有的花形似蝴蝶，有的似虎须、似羊角、似猫耳、似蜘蛛、似猫须……，和艳丽花朵共生的植物叶片，更是奇形怪状，有的如羊蹄、如鱼尾、如龟背，有的叶还具有滴水尖叶，还有那香飘林间的九里香(Murraya paniculata)和怪味袭人的疣柄魔芋(Amorphophallus virosus)，更有那具红、绿、黄三色的嘉兰(Gloriosa superba)，红、白、黄三色的使君子(Quisgualis indica)，苞片形如花瓣的玉叶金花(Mussa enda spp.)，也有夜间才展露芳容的照夜白(Nyctocalos runfelsiiflora)，有闻歌起舞的风流草(Codariocalyx motorius)，有触动即闭合的含羞草(Mimosa pudica)，有形如舞女在翩翩起舞的舞女姜(Globba recemosa)……。许多落叶乔木的换叶期又逢盛花期：如紫铆(Butea monosperma)、云南石梓(Gmelina arborea)、粉花羊蹄甲(Bauhinia variegata var.Candida)、火筒树(Firmiana colorata)等常常繁花满树，使群落外貌极富生气，华丽异常。热带花卉用它们那千姿百态的花形，五彩斑斓的花色，浓郁宜人的气味招蜂引蝶，繁

衍后代。此谢彼盛,四时鲜花不断。

中国热带野生花卉在兰科(Orchidaceae)、姜科(Zingiberaceae)、蝶形花科(Papilionaceae)、天南星科(Araceae)、苦苣苔科(Gesneriaceae)、凤仙花科(Balsaminaceae)、秋海棠科(Begoniaceae)中较为丰富。

人们常把兰科植物称作"热带花王",因为兰花种类多,数量大,花型奇特,花色美丽。兰花有地生、附生和腐生三大类。生长在热带地区的兰花大部分是附生兰,多生长在树干上或枝丫间。它们利用自己肥厚且带根被的气生根,从空气中吸收水分以及溶于水的无机盐或根系周围的腐殖质和有机物,大树只是作为其繁衍、生长、开花的支撑物。它们常和其他花卉以及附生植物共同组成热带雨林特有的生态现象——"空中花园",景象十分动人。据专家统计,仅西双版纳就有野生兰花98属351种之多。

热带雨林中各种植物相伴而生。使君子科的千果榄仁(Terminalia myriocarpa)是热带雨林的上层树种。它9-10月开花,花为淡黄色,小巧玲珑,无数小花沿下垂的花序轴密集排列,若干花序簇拥着挂在树端,宛如礼花倒悬。当花凋落后,成熟的红色顶生果序,挂满树冠,有如下垂红缨,非常醒目。

有的藤本如清明花(Beaumontia grandiflora),也能爬到树冠顶部,而多种榕属植物如木瓜榕(Ficus auriculata)、聚果榕(Ficus racemosa)等,则将它们的花开在茎干上,密密麻麻,十分美丽,蛇菰(Balanophora harlandii)和寄生花(Sapria himalayana)却在树根部寄生。

热带雨林由于森林茂盛,因而林下潮湿、幽暗、阴森,这种遮天蔽日的环境最适宜苔藓、地衣以及蕨类、大叶草本如海芋(Colocasia gigantia)和草花植物如老虎须(Tacca chantrieri)生长。为了争夺阳光,它们互相拥挤、攀附、纠缠,使有限的空间得以充分利用。在这些植物中,草本花卉尤显娇艳多姿,如姜科舞女姜(Globba recemosa),6-9月开花,花为杏黄色。它的花型侧生退化雄蕊突出花管,并发育成鞭状(又名花丝),向上反曲。奇怪的是,花丝上端着生出翼状花瓣和象兰花一样的带紫红斑点的唇瓣,花丝的末端着生出鸟喙一样的附属体——花药,整体造型既像舞女抖绸,又像孔雀引颈回眸,实在别致有趣。还有一种百合科的罗甸蜘蛛抱蛋(Aspidistra luodianensis),其花形硕大,裂片为肉质,花未开时直立,盛开时向外反曲,环抱圆形花筒,颇似爬行的蜘蛛,真是奇特。

热带花卉不仅具有很高的观赏价值,其本身还有众多的经济用途。据初步统计,仅西

双版纳自然保护区的热带雨林中就有药用植物139科728种,占中国药用植物总数的14.2%。姜科(中国有19属143种),其中许多种是著名的南药,如姜黄(Curcuma longa)、郁金(Curcuma aromatica)等。另有用材、蔬菜、油料、芳香油、染料、淀粉、树脂、纤维等植物1572种,占高等植物总数的45%,其经济花卉总数多达1500种。可以说热带林中丰富的植物种群是热带花卉用不尽的源泉和种质资源宝库,有着极高的经济开发价值。

热带雨林是地球生物圈的重要组成部分,在维护生态平衡和自然环境方面起着非常重要的作用,也是人类赖以生存的条件。遗憾的是,地球上的热带森林正在遭受着不间断的、不同程度的破坏和毁灭,许多珍稀宝贵的热带花卉也随之消失。据保守的数字统计,每天有1万多公顷的热带雨林从地球上消失,几个小时就有一种植物灭绝,取而代之的是次生林,乃至荒漠。中国热带的许多地区由于经济活动的干扰,大面积的雨林被次生类型植物所取代,现在只有在自然保护区和极偏僻的边远山区有小片残林分布。

早在本世纪50年代,自然资源遭破坏的情况即引起了中国政府的重视,拟定了《关于天然森林禁伐区(自然保护区)划定草案》;1978年成立了中国"人与生物圈"国家委员会;1987年5月,国务院环境保护委员会又发布了《中国自然保护纲要》。从1956年在广东鼎湖山建立起中国第一个自然保护区以来,迄今中央和地方政府在全国建立了926个自然保护区,仅云南省在热带地区就建立了20个。云南省西双版纳、南滚河、广东省鼎湖山、海南省尖峰岭、西藏墨脱等自然保护区早已蜚声海内外,并引起有关国际组织的关注和重视。西双版纳和鼎湖山自然保护区由于其丰富的物种资源和独特的生态环境而被联合国教育科学文化组织(UNESCO)列入"世界生物圈保护区网络"。

目前在中国,人们已逐步形成热爱大自然、保护大自然、合理开发大自然的共识,美丽而丰富的热带野生花卉正在日益受到人们的重视,并将在经济发展中起到它不可忽视的作用。

FOREWORD

Most part of the torrid zone between the Tropic of Cancer and the Tropic of Capricorn on the earth is water, and great part of the tropical land areas, except some islands and the Amazon Plains, is covered by desert. Few green plants can be seen there. But some parts of Asia and inside China south of the Tropic of Cancer present another sight—criss-crossing rivers and green mountains.

The torrid zone in China is located basically south of the Tropic of Cancer—from south of Jingpu in Taiwan at 123°E in the east to a spot near Yadong (Chomo) and Nyalam at 85° E in the west, and from Zengmu'ansha Islands at 4°N in the south to an area between 21°and 24°N in the north. Influenced by atmospheric circulation, topography, landforms and many other factors the tropical line may rise to 28°-29°N in southeastern Tibet.

The landforms in the torrid zone in China are complex, with alluvial plains, hilly land, mountain areas, highlands, limestone peaks and coral islands. The terrain rises from east to west. The islands in the South China Sea are below the altitude of 100 meters; tablelands bellow 150 meters are found in large stretches in eastern Guangdong Province; Guangxi Zhuang Autonomous Region has many clusters of limestone peaks of 500 to 600 meters; the highest place in the tropical zone in southeastern Yunnan Province is at the altitude of 400 meters; the highest place in southwestern Yunnan Province is 700 meters above sea level while the altitude in western Yunnan Province rises to as high as 800 meters. Influenced by the Fotu effect the tropical climate may reach 1,700 meters above sea level in the northern section of the hot Jinsha and Lancang river valleys. Generally speaking tropical vegetation in China spreads over the southern part of the provinces of Hainan, Taiwan, Guangdong and Yunnan, and the autonomous regions of Guangxi Zhuang and Tibet. The tropical rain forests in China form a strip tilting from southeast to northwest.

Most part of the tropical zone in China is near the sea. Under the influence of southwesterly monsoon of the Indian Ocean and the southeasterly monsoon of the Pacific Ocean the tropical zone in China has a wet climate with plenty of rainfall. Its annual mean temperature is between 20°and 22°C; the accumulated annual temperature is between 7,500 and 9,000° C; and its annual precipitation is more than 1,500 millimeters and that in some places may be as much as 5,000 millimeters due to local terrain features. Plants grow very well in diverse types of soil in these places. Less vegetation is found in the islands in the South China Sea due to too high tides and too often typhoons. Other places such as the area from southern to southeastern Yunnan Province, Hainan Island and southern Guangxi Zhuang Autonomous Region, boast a great variety of plants, and the biological output there is very high. These places are the northern edge of the Southeastern Asian Tropical Rain Forests, one of the world's three largest tropical rain forest regions in the world, and are divided into four categories of wet rain forests, seasonal rain forests, mountain rain forests and monsoon rain forests,

with a general name "tropical northern edge rain forests."

Primeval forests with the best preserved forest ecosystems and forests with the richest biological resources and largest area in China are located in Xishuangbanna, Yunnan Province. With a territory of one 500th of the national total, Xishuangbanna has more than 5,000 species of higher plants, accounting for one sixth of the national total, and for this Xishuangbanna is called a pearl in the "kingdom of plants."

Xishuangbanna lies in southern part of the Hengduan Mountains, rising from south to north. The Ailao and Wuliang mountains in the north prevent cold waves from coming to the south and many river valleys in southern Xishuangbanna lead southwesterly monsoon into the area, causing high temperatures, still winds and high humidity. Effective disposition of water and heat makes Xishuangbanna a cradle of biological evolution and provides excellent conditions for the growth of tropical flowers and plants.

Like other tropical areas in China, Xishuangbanna belongs to the palaeotropical zone. This region bears little glacier impact of the Quaternary Period and has thus preserved a fairly large number of ancient plant species. Of the 20 relic genera of the palaeotropical zone 12 are found in Xishuangbanna and some of them are important elements of the modern vegetation, such as sago cycas *(Cycas spp.)* According to statistics of the plant genera according to geographical distribution, 84.4 percent of the plant species in Xishuangbanna are tropical plants.

Tropical rain forests are the largest biological gene bank on the earth and the most flourishing, complex and energetic type of forests. Their unique, rich natural resources produce some biological and ecological features that are entirely different from forests in other climate zones. Trees there are high and population structure is complex—with as many as five layers from more than 70 meter-high trees to moss and lichen, taking up all the space in the forests. They grow healthily and coexist in harmony. Well-developed plate-like roots support some giant trees which dominate the upper part of the forest; strong and thick air roots and pillar roots hang down from the mother tree and around it to form a "forest"; various vine plants, some 50 centimeters thick and 100 meters long, twine around and climb up trees; parasitic and epiphyte plants form a colorful "air-borne garden;" the sight of flowers blooming on aging stems is common; fig trees bear strings of fruit like rubies on their trunks; the sweet and fragrant fruit of the jackfruit can be as heavy as 10 kilograms; numerous "strangling" plants fight each other for survival; and the wild giant alocasia *(Alocasia macrorrhiza)*, the wild Japanese banana *(Musa acminata)* and the begonia *(Begonia)* with their huge leaves grow in gullies in the forests. Trees and plants of various kinds form a dazzling and ever-changing labyrinth.

Tropical rain forests are a huge garden with many species. Flowers have strange forms,

bright colors and peculiar smells. Some flowers look like butterflies, some like tiger's whiskers, some like cat's ear, some like spiders and still some like cat-whiskers. Some leaves resemble sheep hoofs, some fish tail and still some the back of a turtle. Some leaves drip water from their tips. The fragrance of the jasminorange *(Murraya paniculata)* spreads far and wide in the forest, and the strange smell of the giantarum *(Amorphopha virosum)* provokes people's nostril. There are the glorylily *(Gloriosa auperba),* the Rangooncreeper *(Quispulia indica)* in red, white and yellow colors, the Jadeleaf goldflower *(Mussa enda spp.)* with bracts like petals, the broadleaved epiphyllum *(Epiphyllum oxypetalum)* that blooms in early morning, the lighting the night *(Nyctocalos runfelsiiflora)* that blooms only at night; the graceful grass *(Codariocalyx motorium)* that dances when it hears singing, the sensitive plant *(Mimosa pudica)* that closes its leaves when touched, and the dancing-girl ginger *(Globba recemosa)* that looks like a dancing girl. Many deciduous trees bloom and shed their leaves at the same time, such as the Bengal kino *(Butea monosprma),* the Malay bushbeech *(Gmeliina arborea),* the purple bauhinia *(Bauhinia varlegata)* and the firetube tree *(Firmiana colorata).* Their crowns are covered with blossoms whose strong fragrance attract butterflies. Flowers are found in tropical rain forests in all the four seasons.

Most of tropical plants in China belong to the families of *Orchidaceae, Zingiberaceae, Papilionaceae, Araceae, Gesneriaceae, Balsaminaceae* and *Begoniaceae.* People often call the orchid "King of Tropical Flowers" for its many varieties, large number and beautiful and peculiar flower forms. Orchids are divided into three major kinds—ground, epiphyte and saprophytic. Most of orchids growing in tropical areas are epiphytes on tree trunks or branches. They absorb moisture, inorganic salts dissolved in water, humus and organic matters through their fat and thick air roots. The tree where they grow is merely a medium for their reproduction, growth and flowering. Orchids and other flowering plants make up an attractive mid-air garden. According to specialists there are 351 kinds in 98 genera in Xishuangbanna.

Various plants coexist in tropical rain forests. The terminalia *(Terminalia myriocarpa)* of the *Quispulia indica* family is a typical higher-layer species in tropical rain forests. Its yellow, exquisite blossoms open in September and October. Numerous tiny flowers hang down the floral axis and a number of inflorescence hang from the tree top like strings of firecrackers. After the flowers wither ripe fruits with a red tip cover the tree crown like red glistening tassels.

The Easter heraldtrumpet *(Beaumontia grandiflora),* a kind of vine can climb trees; the eared strangler fig *(Ficus auriculata)* and the fruit-gathering fig *(Ficus Racemosa)* put out flowers on their trunks in close arrangement; the snake mushroom *(Balanophora harlandii)* and the parasitic flower *(Sapria himalayana)* grow at the roots of trees.

The ground in dense tropical rain forests is wet and dark, suitable for the growth of moss,

lichen, pterdophyte, large-leaved grass such as the elephantsear *(Colocasia gigantia)* and flowering grass such as the tacca *(Tacca chanfrieel)*. In order to compete for sunlight and space, the plants grow closely and entwine with each other. Among them grass flowers are prettier. Dancing-girl ginger *(Globba recemosa)*, for example, blooms from June to September. Its apricot-yellow blossoms grow on one side and its degenerated stamen protrudes from the floral tube like a whip (called floral string) that goes upward and then bends downward. A strange phenomenon is that at the top of the whip-like floral string grows a bird's bill-like appendage—wing-like petals and labellums with purple speckles like those on orchid flowers. The form of the plant looks like a dancing girl playing with ribbons or a peacock looking backward. The common aspidistra *(Aspidistra luodianensi)*, a kind of lily, has very large flowers with fleshy petals. Before opening the flower stands erect, but when blooming the petals turn outward and then downward to embrace the circular spline resembling a crawling spider.

Tropical plants are not only decorative but also have high economic value. According to incomplete statistics, 728 kinds of 139 families in the Xishuangbanna Natural Reserve are of medicinal value, accounting for 14.2 percent of medicinal herbs of the whole country. Many ginger varieties (there are 143 kinds of 19 genera in China) are important ingredients in traditional Chinese medicine, such as the common turmeric *(Curcuma longa)* and *(Curcuma aromatica)*. In Xishuangbanna there are 1,572 kinds of timber, vegetable, oil, perfume, dyeing, starch, resin and fiber plants, accounting for 45 percent of the total higher plants. Xishuangbanna also boasts 1,500 commodity flowering plants. The rich plant variety is an inexhaustible source for tropical flowers and a treasurehouse of species. They are of a very high value for commercial development.

Tropical rain forests, an important part of the earth's biosphere, play a very important role in safeguarding ecological balance and natural environment, and provide conditions humankind relies on for its existence. It is a pity tropical rain forests on the earth are being damaged and destroyed uninterruptedly. Many rare tropical flowers have disappeared. According to conservative statistics, in present world about 10,000 hectares of tropical rain forests are eliminated every day and a plant species becomes extinct in several hours. They are replaced by second growth or even by deserts. Many tropical areas in China have been disturbed by human activities and large stretches of rain forests have been replaced by second growth. Today only small stretches of remnant rain forests can be found in natural reserves or extremely remote mountain areas.

As early as in the 1950s, destruction of natural resources had aroused the attention of the Chinese government which formulated the "Draft Plan for the Delimitation of Natural Lumbering Forbidden Area (Natural Reserve)." In 1978 the State "Man and Biosphere" Commis-