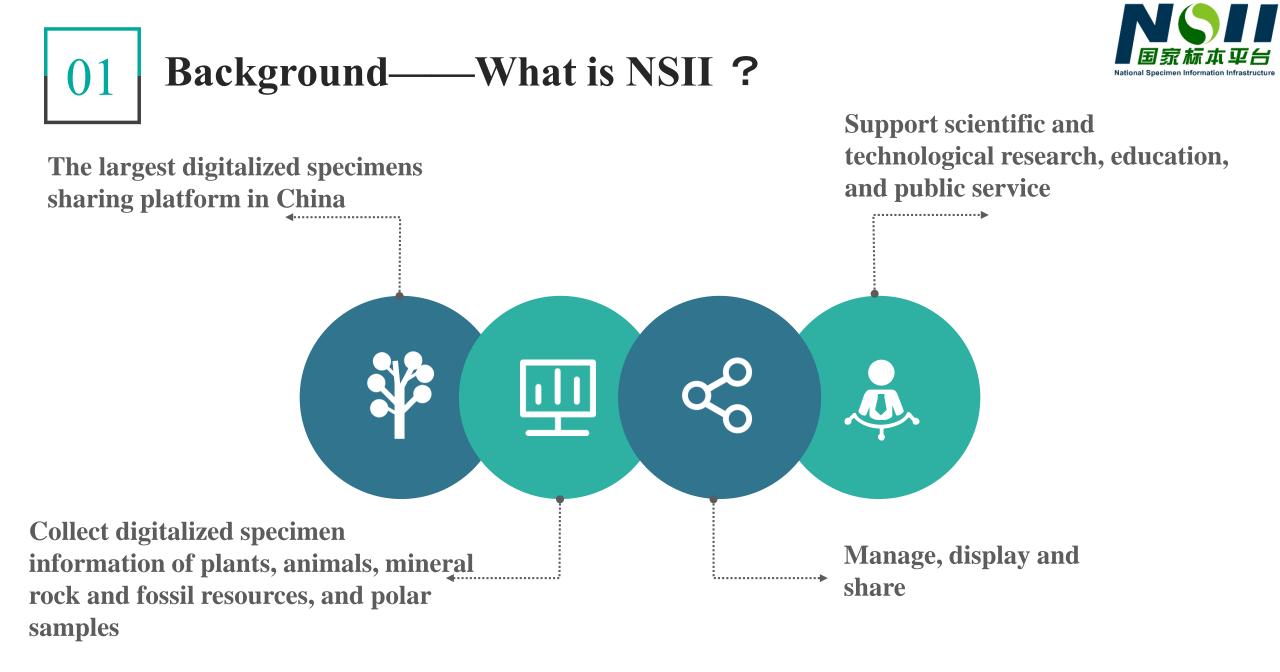
# Information Infrastructure (NSII)

Xiaoqian Zhao Keping Ma National Specimen Information Infrastructure Office June 4th, 2018

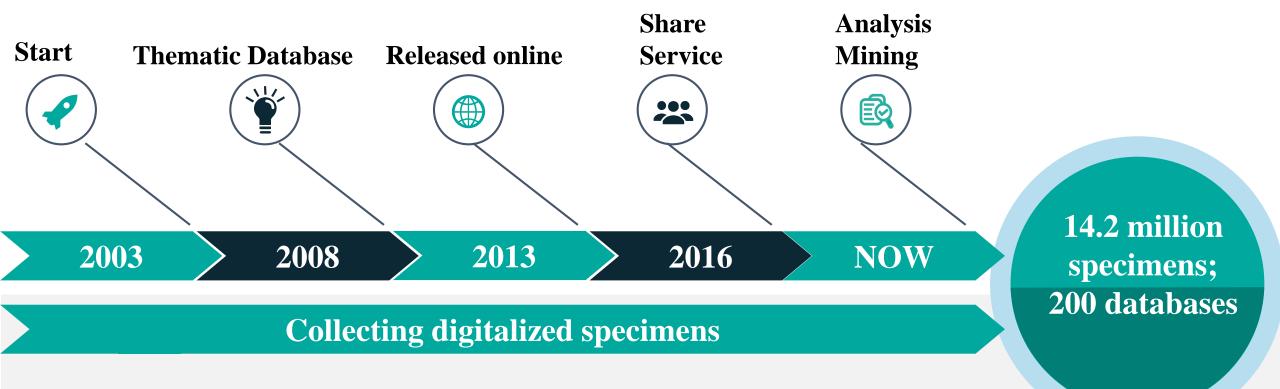












http://www.nsii.org.cn/2017/home.php



# Background——NSII Construction

国数字植物标本馆 Chinese Virtual Herbarium



National digital-museum of animal specimens



National Infrastructure of Mineral, Rock and Fossil Resources for Science and Technology



Specimen Resources Sharing Platform for Education

Fund & Manage & Display & Service

0]



Resource-sharing platform of polar Samples



National Infrastructure of Specimen Resources for Nature Reserves

6 sub-platforms Organize & Integrate 190 organizations Digitalize specimens

1929

韻

Data

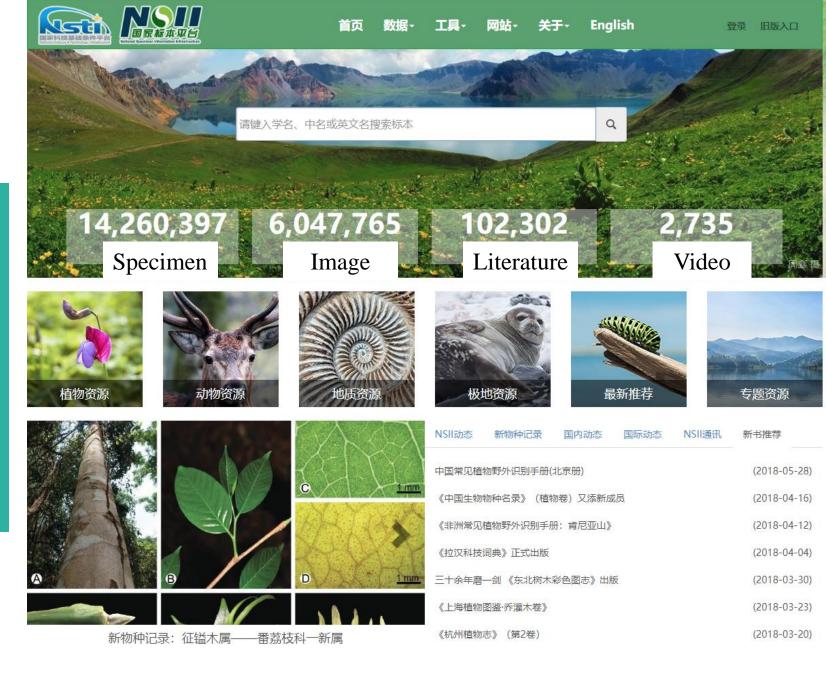
Data 02

# Specimen

Image

Literature

Checklist



Portal of NSII



# Total: 14,260,397

10,418,406 Plant specimens
3,681,377 Animal specimens
156,467 Specimens of mineral rock and fossil resources
4,082 Polar samples

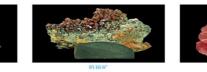








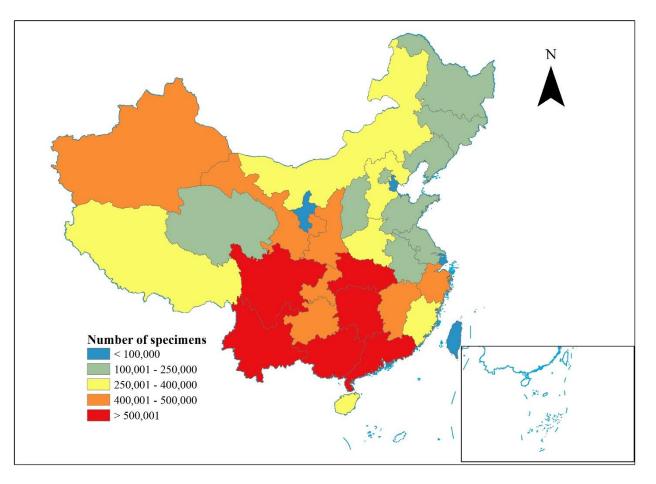








# 02 Data—— Specimen

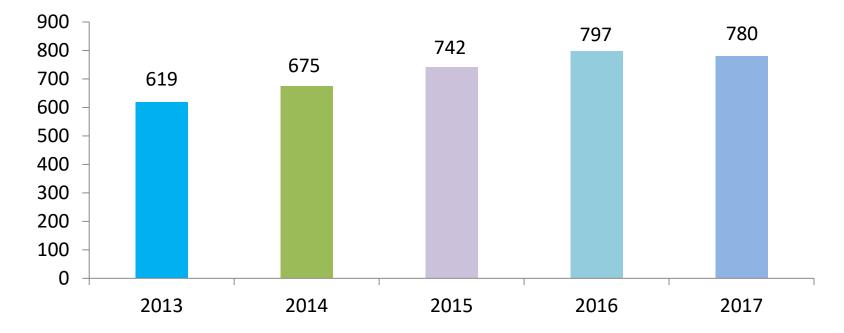


Number of digitalized specimens in each province of China (As of May 31st, 2018)

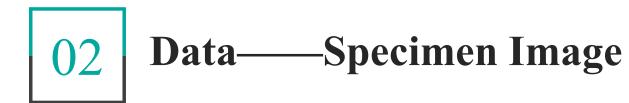


# 02 Data—Specimen

In thousands

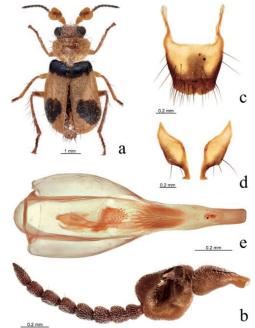


Annual number of digitalized specimens (As of January 31st, 2018)







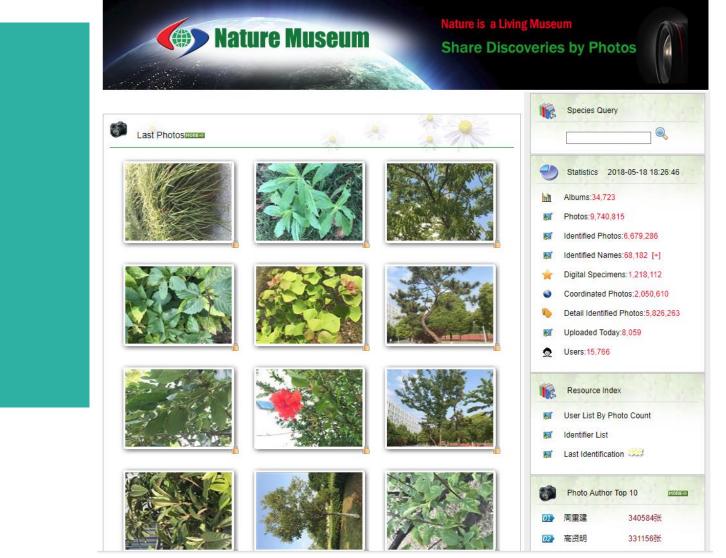






# 02 Data—Living Plant Image

Home | Nature Gallery | Taxonomy | Species | Books | My Gallery | Favorites | About Us | Forum | Sign Up Sign In 中文版



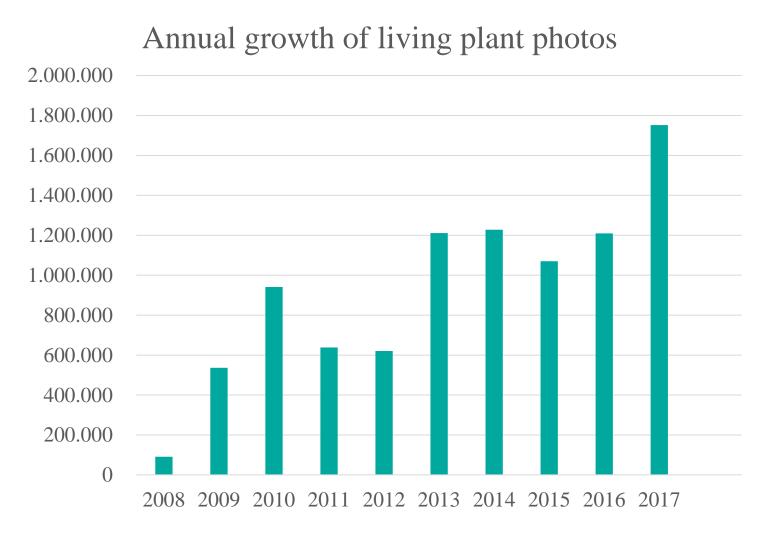


2,050,610 GPS Coordinates
6,679,286 Identification information
68,182 Identified Species
15,000 Species geo-marked in field

Chinese Field Herbarium (CFH) http://www.cfh.ac.cn/



# **Data**—Living Plant Image



# Data——Literature 02



键入物种名称或专著关键词搜索

□搜专著

Q搜物种

#### ♀ 文献网站

- biodiversity heritage library (BHL)
- BHL China
- 中国植物志电子版
- Flora of China
- The International Plant Names Index (IPNI)

#### ■ 资源推荐

中国高等植物图鉴专题

- 植物学拉丁文学习专题
- 英拉汉植物名称专题

■ 用户评论	
<b>C</b> i 15	// ت

し 提交评论

查看全部评论

#### BHL文献专著搜索



本站已经上线共享了BHL扫描的生物多样性历史文 献专著图书3万余册:每册图书中已经标明了所包 含的物种名录列表,点击直达页面! **搜索提示:**在页面顶部键入文献名称关键词,点击

搜索"搜专著"可以获取专著的列表

#### 物种发现文献

- Description and ecology of a new species of Eriopeltastes Burmeister & Schaum, 1840 (Coleoptera: Scarabaeidae: Cetoniinae: Trichiini), from KwaZulu-Natal, South Africa (2013-04-11)
- The taxonomy of the Japanese oak red scale insect, Kuwania quercus (Kuwana) (Hemiptera: Coccoidea: Kuwaniidae), with a generic diagnosis, a key to species and description of a new species from California (2013-04-11)
- A new genus of Eucharitidae (Hymenoptera: Chalcidoidea), with notes on life history and immature stages (2013-04-11)
- Notes on Bonea Roewer, 1914 and Lomanius Roewer, 1923 (Opiliones: Laniatores: Podoctidae), with the description of three new species from China (2013-04-11)



推荐专著: 中国野外植物识别手册系列



# 102,302



# Data——Literature

NSII 文献库 Literature retrieval

#### BHL文献专著搜索

02

 I. Zoologia specialis quam expositus animalibus tum vivis : tum fossilibus potissimum Rossiae in universum et Poloniae in species / ed. Eduardus

 Eichwald.
 t.2 (1830)

 IAT
 2. Zoologia specialis quam expositus animalibus tum vivis : tum fossilibus potissimum Rossiae in universum et Poloniae in species / ed. Eduardus

 Eichwald.
 t.1 (1829)

**ENG** 3. Preliminary report on the paleontology of the Black Hills, containing descriptions of new **species** of fossils from the Potsdam, Jurassic, and Cretaceous formations of the Black Hills of Dakota.

ENG 4. Karyotypes of six species of bats (Chiroptera) from the Dominican Republic /

ENG 5. A new genus and species of flightless duck from Campbell Island /

ENG 6. A new sub**species** of the bat Eumops auripendulus (Chiroptera: Molossidae) from Argentina and eastern Brazil /

ENG 7. A new subspecies of the red fig-eating bat from Puerto Rico /

ENG 8. Three new species of Labidocarpine mites (Listrophoroidea, Chirodiscidae) from Puerto Rican bats /

ENG 9. A new species of Glauconycteris (Vespertilionidae, Chiroptera) /

ENG 10. A new species of bat of the genus Sturnira (family Phyllostomatidae) from northwestern South America /

Ī	Down	load

标题: Zoologia sp. i fossilibus potissimum Rossiae in universum et Poloniae in species / ed. Eduardus Eichwald.

Q搜物种

■捜专著

语言: LAT

卷册: t.2 (1830)

作者:

■ 专著详情

♀BHL文献原始网站 ▲ PDF全文下载

# Related species list

Argonauta	(page:34)	Asellota	(page:)
Amphicoma vulpes	(page:)	Arctinia	(page:)
Aptera	(page:)	Arctinia	(page:)
Aphodius sordidus	(page:)	Arctinia	(page:)
Antherophagus	(page:)	Alophus	(page:)
Aphodius fossor	(page:)	Aphodius	(page:)
Anobium rufipes	(page:)	Achrus	(page:)
Agonum	(page:)	Anthrenus varius	(page:)
Affinis	(page:)	Apus	(page:)
Anthicus	(page:)	Apus productus	(page:)
Anthrenus scrophulariae	(page:)	Antherophagus nigricornis	(page:)
Aranea	(page:)	Ampyx nasutus	(page:)
Argulus	(page:)	Argonauta	(page:)
Attagenus pellio	(page:)	Asaphis	(page:)
Acarus	(page:)	Acanthomysis serrata Liu and	
		Wang%2C 1980	(page:)
Affinis	(page:)	Aesalus scarabaeoides	(page:)
Arachnoidea	(page:)	Adetus pisciformis Breuning%	2C 1971

< 返回列表 と 合内蒙古種物志、v3 ・ 一内蒙古種物志、v3 ・ 一の蒙古種物志、v3 ・ 一の蒙古種物志、v3 ・ 一の蒙古種物志、v3 ・ 一の蒙古種物志、v3 ・ 一の蒙古種物志、v3 ・ 二の植物志、v3 ・ 二の草物(物志・v3) ・ 二の草物(本) 二の主) 二の主 二の主) 二の主 二の主) 二の主

Ⅰ □ 河北植物志,v1

□ □ 河南植物志, v2

■ □浙江植物志,v3

+ - 1:1 100%

# Species retrieval

#### 184

卵形,长5-15厘米,宽2-5厘米,先端纯 或箭尖,基部圆,两面无毛或下面 斑生 短柔 毛,侧脉7-10对,侧生小叶较小,叶柄、叶 轴硫生短柔毛,小托叶钻形,与小叶柄近等长。 圆锥花序顶生,伸长,分枝细,花序轴,花梗 均密生黄褐色绒毛,花单生于花序轴的节上, 松散排列,萼钟状,密生锈色毛,花冠紫色, 旗響背面密被绢状毛,干时常呈银白色,子房 无柄。荚果条形,长5.5-12厘米,近木质, 密被灰色绒毛,后渐秃净,种子4-5。花期 5-7月,果期10-11月。

产皖南歙县,祁门,休宁等地。生于山坡 林中及灌丛,谷地,路边及溪沟旁,常攀生于 岩壁上。分布于浙江、江西、福建、湖南、湖 北、广东、广西、四川、贵州、云南、甘肃等 省(区)。越南、老挝也有。 茎皮纤细拉力强,可制绳索及羞纸,种子





# Data——Checklist

# Plant

### Plant classification system tree

### 🛢 😑 Plantae 植物

()2

- 🖦 🗀 Species 2000 中国 (2016)
- 🖮 🗀 Species 2000全球 (2013)
- 🖲 🗀 The Plant List
- ▲□亚洲苔藓植物名录(2013)

#### Plant classification system tree

#### 🖁 😑 Plantae 植物

- Species 2000中国 (2016)
- ■●Acanthaceae 爵床科
- ➡ → Acanthus 老鼠勒属
  - --- Acanthus illicrifolius var. xiamenensis 厦门老鼠簕 -- Acanthus leucostachyus 刺苞老鼠簕
  - Acanthus leucostachyus 则包老鼠
  - Acanthus ilicifolius 老鼠筯
  - Acanthus illicrifolius
- 🖢 🗀 Andrographis 穿心莲属
- 🖢 🗀 Asystasia 十万错属
- ▲ ▲ Asystasiella 白接骨属
- 🖻 🗀 Barleria 假杜鹃属
- 🖻 🗀 Blechum 赛山蓝属
- 🖮 🗀 Blepharis 百簕花属
- 😐 🗀 Chroesthes 色萼花属
- ■□Clinacanthus 扭序花属
- □Codonacanthus 钟花草属
- 🖹 🔤 Cosmianthemum 秋英爵床属
- 🛎 🗀 Cyrtanthera 珊瑚花属
- 🖹 🗀 Cystacanthus 鳔冠花属
- 🛎 🗀 Dicliptera 狗肝菜属
- 🖹 🗀 Diflugossa 疏花马蓝属
- 🖥 🗀 Dipteracanthus 双翅爵床属
- 🛎 🗀 Echinacanthus 恋岩花属
- ■□Eranthemum 喜花草属
- 🖻 🗀 Goldfussia 曲蕊马蓝属

# Animal

### Animal classification system tree

## 🖁 😑 Animalia 动物

- 🛎 🗀 Species 2000中国(2016)
- 🛎 🗀 Species 2000全球

### Animal classification system tree

#### 🛢 😑 Animalia 动物

- 🖮 😂 Species 2000中国(2016)
- 😐 🗀 Acanthasteridae 长棘海星科
- 🖮 🗀 Acanthoclinidae 棘鮗科
- ▲ Canthuridae 刺尾鱼科
- ▲ ▲ Accipitridae 應料
- ▲ ▲ Acipenseridae 鲟科
- ▲ □ Acoetidae 蠕鳞虫科
- ▲ □ Acraeidae 珍蝶科
- ▲ □ Acrochordidae 瘰鳞蛇科
- ▲□Acropomidae 发光鲷科
- □ Acteocinidae 拟捻螺科
- □ Acteonidae 捻螺科
- ▲ Aegithalidae 长尾山雀科
- -- ▲ ● ● Aegithinidae 雀鹎科
  - 🖹 🖯 Aegithina 雀鹎属

    - 🗋 Aegithina tiphia subsp. philipi 黑翅雀鵯
    - 🗋 Aegithina tiphia 黑翅雀鹎
    - 🕒 Aegithina lafresnayei subsp. innotata 大绿雀鹎
- 🖢 🗀 Aeteidae 列胞苔虫科
- 🛎 🗀 Aethridae 奇净蟹科
- 🖹 🗀 Agamidae 鬣蜥科
- 🖹 🗀 Agelenidae 漏斗蛛科
- □ Aglajidae 拟海牛科
   □ Aglasiidae 群海绵科

## Fungus

Fungi classification system tree

## 🛢 😑 Fungi 真菌

- □ Species 2000中国(2016)
- □ Species 2000全球(2013)
- 🗄 🗀 Index Fungorum

#### Fungi classification system tree

#### 🖥 😑 Fungi 真菌

□ □ □ Species 2000中国(2016) ■●Anthracoideaceae 炭黑粉菌科 Anthracoidea sempervirentis Anthracoidea vankyi 范基炭黑粉菌 🗅 Anthracoidea lindebergiae Anthracoidea subinclusa 圆孢炭黑粉菌 Anthracoidea microspora 小孢炭黑粉菌 Anthracoidea nepalensis 尼泊尔炭黑粉菌 Anthracoidea paniceae 黍状苔炭黑粉菌 Anthracoidea siderostictae 宽叶苔炭黑粉菌 Anthracoidea smithii 史密斯炭黑粉菌 Anthracoidea filifoliae 细叶嵩草炭黑粉菌 Anthracoidea intercedens 林氏炭黑粉菌 Anthracoidea caryophylleae 石竹叶苔炭黑粉菌 Anthracoidea eleocharidis 柄囊苔炭黑粉菌 Anthracoidea elynae 嵩草炭黑粉菌 Anthracoidea shaanxiensis 陕西炭 里粉菌 Anthracoidea striata 条纹炭黑粉菌 Anthracoidea xizangensis 西藏炭黑粉菌 - 🗋 Anthracoidea yunnanensis 云南炭黑粉菌 Anthracoidea angulata 角孢炭黑粉菌 Anthracoidea caricis 苔炭黑粉菌 - Anthracoidea setosae 刺毛薹草炭黑粉菌 🗋 Anthracoidea setschwanensis 四川炭黑粉菌 Anthracoidea macranthae 大花嵩草炭黑粉菌 Anthracoidea misandrae 米萨苔炭黑粉菌 Anthracoidea mulenkoi 米氏炭黑粉菌

# Ancient plant

Ancient plants checklist tree

古植物名录 Fossil plant from coal balls
 中国煤核植物 Fossil Pteridophytes
 中国化石蕨类植物 ossil Gymnosperms

🖬 🔜 Diaphorodendron 🗟 不應 ■ Synchysidendron 杂木属 ■ Lepidodendron 鳞木属 Lepidodendron Lepidophloides Yao, 1980 鳞皮鳞木 Lepidodendron asymetricum Gu et Zhi, 1974 偏鳞木 🗟 🔤 Sigillaria 封印木属 ■ Lepidophylloides 似鳞叶属 ■ Sigillariopsis 拟封印木叶属 🝺 🚞 Stigmaria 根座属 ■ Achlamydocarpon 无被大孢属 ■ Lepidostrobus 鳞孢穂属 ◉ ⊇ Sphenophyllum 楔叶属 🛦 🚞 Annularia 轮叶属 ■ Arthropitys 节茎木属 ■ ■ Astromyelon 星髓根属 ■Zimmermannioxvlon 奇默曼根属 Psaronius 辉木属 ■ Stipitopteris 枝蕨属 ■ Stewartiopteris 紫轴蕨属 ■ Scolecopteris 虫嚢蕨属 ■ Eoangiopteris 始莲座蕨属 ■ Palaeosmunda 古紫萁属 ■Shuichengella 水城蕨属 ■ Botryopteris 群赛蕨属 ■ Anachoropteris 回卷蕨属 ■ Etapteris 艾塔蕨属 ■ Corynepteris 棒穂蕨属 🛓 🚞 Heterangium 异茎木属 ■ Coronostoma 王冠籽属 🝺 🦢 Conostoma 锥形籽属

Fossil flora of China Genus : 492 Species : 2,636

■ Pachytesta 厚壳籽属



## **Special resource**——**Species page** 03

#### Ginkgo biloba银杏



#### **Description** 乔木,高达40米,胸径可)

,裂, 粗糙; 幼年 及壮年树冠圆锥形,老则广卵形;枝近轮生,斜上伸展(雌株的大枝常较雄株开展);一年生 的长枝淡褐黄色,二年生以上变为灰色,并有细纵裂纹;短枝密被叶痕,黑灰色,短枝上亦可 长出长枝;冬芽黄褐色,常为卵圆形,先端钝尖。叶扇形,有长柄,淡绿色,无毛,有多数叉 状并列细脉,顶端宽5-8厘米,在短枝上常具波状缺刻,在长枝上常2裂,基部宽楔形,柄长3-10(多为5-8)厘米、幼树及萌生枝上的叶常 较而深裂 (叶片长达13厘米,宽15厘米),有时裂片再分 裂(这与较原始的化石种类之叶相似),叶在一年生长枝上螺旋状散生,在短枝上3-8叶呈簇生状,秋 季落叶前变为黄色.球花雌雄异株,单性,生于短枝顶端的鳞片状叶的腋内,呈簇生状;雄球花葇荑 花序状,下垂,雄蕊排列疏松,具短梗,花药常2个,长椭圆形,药室纵裂,药隔不发;雌球花 具长梗,梗 端常分两叉,稀3-5叉或不分叉,每叉顶生一盘状珠座,胚珠着生其上,通常仅一个叉端 的胚珠发育成种子,内媒传粉。种子具长梗,下垂,常为椭圆形、长倒卵形、卵圆形或近圆球 形,长2.5-3.5厘米,径为2厘米,外种皮肉质,熟时黄色或橙黄色,外被白粉,有臭叶;中处皮 白色,骨质,具2-3条纵脊;内种皮膜质,淡红褐色;胚乳肉质,味甘略苦;子叶2枚,稀3枚,发芽时 不出土,初生叶2-5片,宽条形,长约5毫米,宽约2毫米,先端微凹,第4或第5片起之后生叶扇形,先端 具一深裂及不规则的波制 种子9-10月成熟。

#### 物种文献

物种描述

## Literature

- · Microsporogenesis of Ginkgo biloba L. with especial reference to the distribution of the plastids and to cell wall formation, P2(8)
- · Le Ginkgo biloba L. / par Andreas Sprecher.1907

## Classification

Plantae 植物界 Gymnospermae # Ginkgopsida 银君 Ginkgoales 银杏 Ginkgo 银杏属	结纲 注目 根杏科	
学名信息 Ginkgo biloba L.	Name	(成元名)
TPL1.0(2013) Ginkgo biloba L. 银杏 col2013cn		(接受客)
Ginkgo biloba L.		機環名

### 相关搜索结果 IPNI 查询结果 Wiki 音询结果 Flickr 物种图库 Bing 物种图库

col2013

# **Distribution map**



### Dipteronia dyeriana 云南金钱枫



#### 物种描述

Trees ca. 3.5 m tall. Branchlets gray or greenish gray. Leaves deciduous, 30-40 cm; petiole ca. 20 cm; leaflets usually 11, terminal leaflet cuneate at base, with a petiolule 2-3 cm, lateral leaflets opposite, usually oblong or rarely rounded at base, subsessile; leaflet blades abaxially light green, adaxially dark green, ovatelanceolate, 9-13 × 2.4-4 cm, papery, midvein densely yellowish green pubescent on both surfaces, lateral veins 13 or 14, slightly yellowish green pubescent, margin remotely and coarsely serrate, teeth acute, apex acuminate or caudateacuminate. Inflorescence terminal, yellowish green pubescent. Inflorescence terminal or axillary, erect, 15-25 cm, densely white pubescent; peduncles 4-6 cm. Flowers ca. 2.5 cm in diam.; pedicel ca. 2 cm, slender, pubescent. Sepals 5, yellow-green, ovate or elliptic, outside pubescent. Petals 5, alternate with sepals, white, broadly ovate, ca. 1 × 1.4 mm. Filaments longer than petals in staminate flowers, but shorter than petals in hermaphroditic flowers, glabrous. Ovary compressed, hirsute, 2-loculed, rudimentary in staminate flowers; style short. Nutlets connate at base and encircled by orbicular wing, 5-6 cm in diam.

□标本 □图片

	± مله ص
Plantae #	
Angiospe	ermae 被子植物门
Dicotyle	doneae 双子叶植物纲
Sapind	ales 无患子目
Acera	ceae 槭树科
Dipte	eronia 金钱槭属

学名信息	
Dipteronia dyeriana A.Henry TPL1.0(2013)	接受名
Dipteronia dyeriana Henry 云南金钱枫 col2013cn	援受名
Dipteronia dyeriana Henry col2013	接受名

相关搜索结果	
IPNI 查询结果	
Wiki 查询结果	
Flickr 物种图库	
Bing 物种图库	

#### 物种发现数据分布

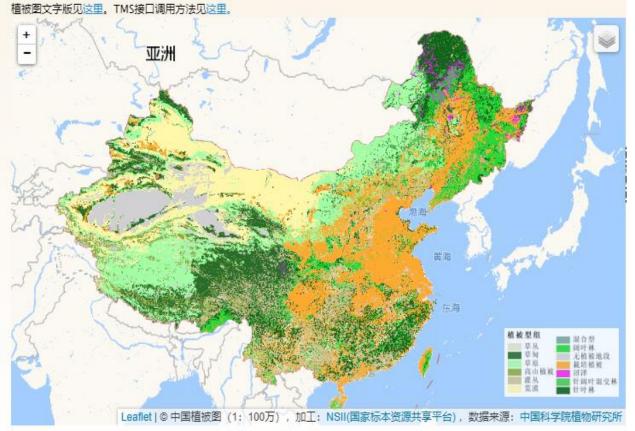
+ -



# **03** Special resource——Chinese vegetation

# 中国植被图(地图版) (1:1,000,000)

说明:在地图上点击鼠标即可获取当前位置的植被信息,地图右上角可以隐藏植被图层查看地名信息。滚动鼠标或者点击左上角图标可以 图。



### 植被图索引

## 中国植被图 (1:100万) 在线系统

#### 温带针叶林特征:

○ 百页 [文字版] [地图版]
 ○ 計时林
 ○ 相同叶祝。
 ○ 福叶林
 ○ 灌丛
 ○ 草原
 ○ 草句
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第二节 温带针叶林 Section 2 Temperate Needleleaf Forest 温带针叶林系指分布于暖温带地区 平原、丘陵及低山的针叶林。平原、丘陵针叶林的建群种要求温和干燥,四季分明,冬季寒冷(1 月平均气温(低于0℃)的气候条(牛和中性或石灰性的褐色土与棕色森林土。温带针叶林的生境较干燥 而土层薄,组成种类通常比较贫乏,乔木层建群种主要是松屋和侧柏屋(Platycladus)的一些种 类;灌木层常见的有胡枝子犀(Lespedeza)、绣线菊属(Spirea)、栒子属(Cotoneaster)、黄栌属 (Cotinus)、酸枣属(Zizyphus)、荆条犀(Vitex)等唇的种类;草本层多系禾本科,莎草科苔草属 (Carex)、菊科、豆科等。温带针叶林主要群系如下。



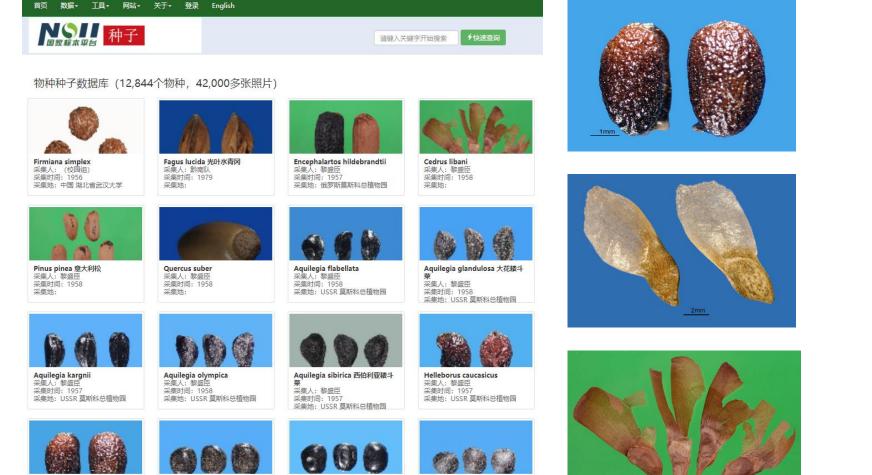
● 2 引 南管涔山海拔 1800m的油松 (Pinus tabulaeformis)、辽 东栎 (Quereus liaotungensis)林 (马子清)

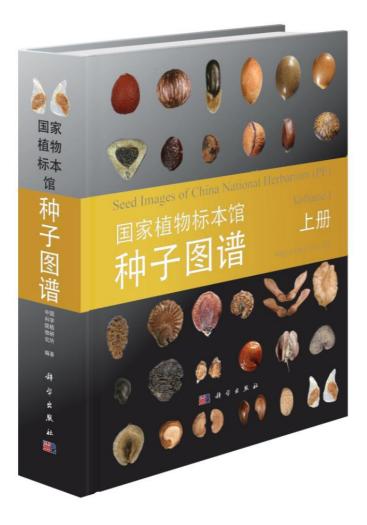
群系或亚	群系列表:
油松林	(群系)
赤松林	(群系)
黑松林	(群系)
白皮松林	木 (群系)
侧柏林	(群系)





# 12,844 species 42,000 photos





Helleborus purpurascens 采集人:黎盛臣

Paeonia albiflora

采集人:黎盛臣



Paeonia anomala 窄叶芍药

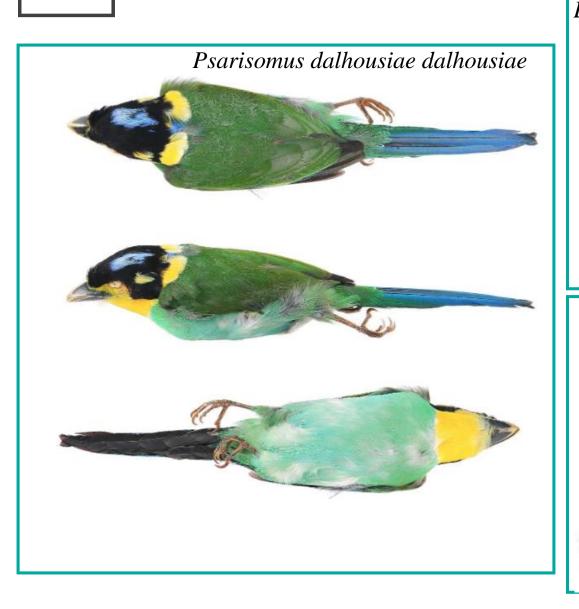
采集人:黎盛臣

Paeonia obovata 草芍药 采集人:黎盛臣





# **03** Special resource—animals with 720° views



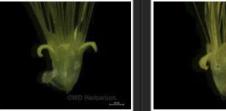




## **Special resource**——Fine anatomy 03



















东方巨齿岭





台湾相思



台湾相思

台湾相思





Acacia Mill.















东方巨齿蛉















东方巨齿岭





# 03 Special resource——Infrared images of wild animals Examples in the Store Examples in













# 03 Special resource——Exquisite minerals and crystals















Aquamarine

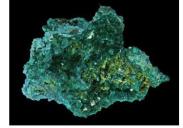




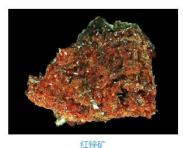






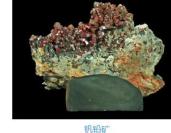


透视石



白铅矿

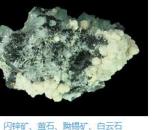




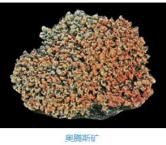


萤石、重晶石









Mineral Crystal Ornamental Stones

Gems



## **Special resource**—Polar 360 Panorama 03





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中科院海洋所-科普馆1楼 2014-03-23 21:04







Scientific station, vessel and polar sample repository

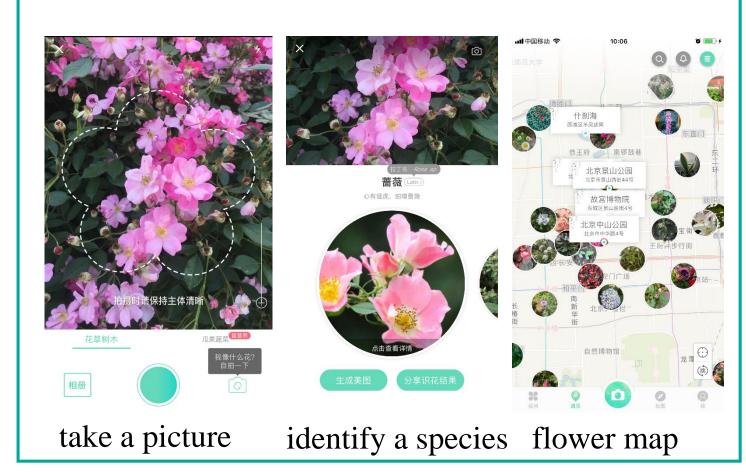




The only polar specimen repository in China. 7,000 specimens —— all the specimens collected by Chinese scientists in the North and South Pole.



# Xing Se app



- Automatic identification
- Covered over 10,000 species
- Training images provided by CFH

**Tool**——**Identifying plants** 

- Accuracy is higher than 92%
- 8,000,000 users

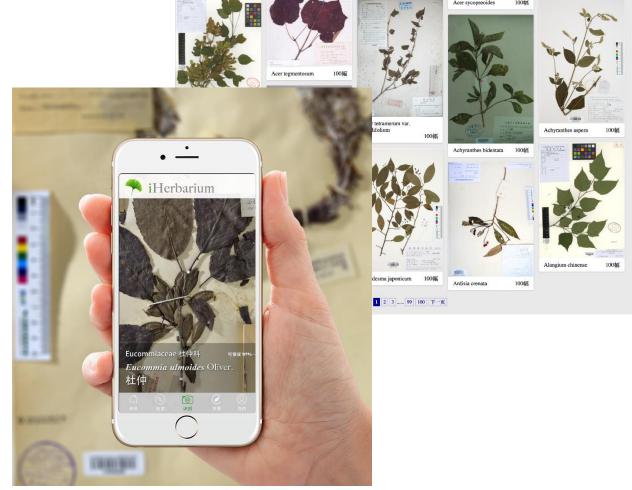
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# **04 Tool**——Identifying plant specimens

# iHerbarium app

- Training data: 1,000,000 plant species images (286 families; 2092 genera; 10,000 species)
- Testing data: 10,000 plant species images
- Accuracy: 78.0% (family); 60.5% (genus)



Automatic identification to family level and genus level

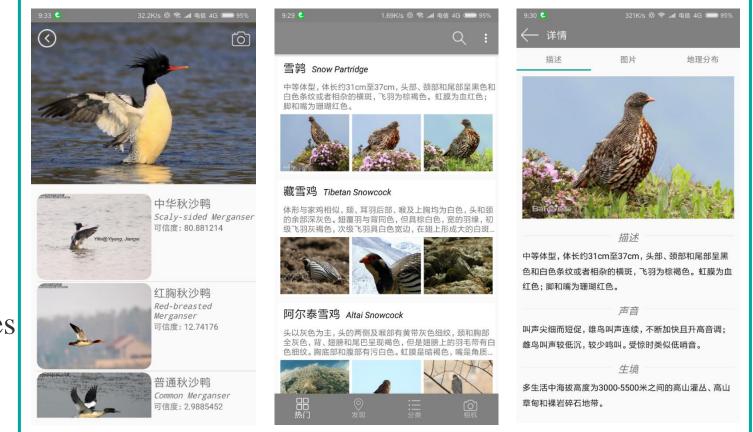


# **04 Tool**——**Identifying animals**

# **Identifying wild birds**

1,276 Species, cover almost 90% wild birds of China

Take a photo of wild bird Give a quick identification Provide description of birds, images and distribution map.







# More digitalized specimens More data analysis and mining More service

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