National Specimen Information Infrastructure (NSII)

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Background——What is NSII？

The largest digitalized specimens sharing platform in China

Support scientific and technological research, education, and public service

Collect digitalized specimen information of plants, animals, mineral rock and fossil resources, and polar samples

Manage, display and share
Start
Thematic Database
Released online
Share Service
Analysis Mining

2003 2008 2013 2016 NOW
Collecting digitalized specimens

14.2 million specimens; 200 databases

Background——NSII Construction

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
- Resource-sharing platform of polar Samples
- National Infrastructure of Specimen Resources for Nature Reserves

6 sub-platforms
Organize & Integrate

190 organizations
Digitalize specimens

Data

Fund & Manage
Display & Service
02 Data

Specimen
Image
Literature
Checklist

Portal of NSII
02 Data—— Specimen

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

Total: 14,260,397
Number of digitalized specimens in each province of China (As of May 31st, 2018)
Data——Specimen

Annual number of digitalized specimens (As of January 31st, 2018)
02 Data——Specimen Image

5,727,658
Data——Living Plant Image

- **9,740,815**
  - 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

Annual growth of living plant photos
102,302
Literature retrieval

Download

Related species list

Species retrieval
**Specimen**

**Name**

*Ginkgo biloba* L. (2021.3)

**Images**

**Distribution map**

**Literature**

- Microsporogametes of *Ginkgo biloba* L. with especial reference to the distribution of the plastid and to valvate formation, 1909.
- Le *Ginkgo biloba* L. par Andreas Spruce, 1897.

**Species**

*Ginkgo biloba* L. (2021.3)

**Description**

*Ginkgo biloba* L. (2021.3)

**Classification**

- **Plantae**
- **Gymnospermae**
- **Ginkgoaceae**
- **Ginkgo**

**Distribution map**

**Specimen**

*Dipterona dyeriana* 云南金钱枫

**Description**

Trees ca. 3.5 m tall. Branchlets gray or greenish gray. Leaves deciduous, 30-40 mm petiole ca. 20 mm; leaflets usually 11, terminal leaflet cuneate at base, with a petiolar 2-3 mm, lateral leaflets oppositely, usually oblong or rarely rounded at base, subterminal leaflet blades abaxially light green, abaxially dark green, ovate-lanceolate, 9-13 x 2-4.4 cm, papery, midrib densely yellowish green pubescent on both surfaces, lateral veins 13 or 14, slightly yellowish green pubescent, margins remotely and coarsely serrate, teeth acute, apex acuminate or caudate-acuminate, Inflorescence terminal, yellowish green pubescent, Inflorescence terminal or axillary, erect, 15-25 cm, densely white pubescent; peduncle 4-6 mm, flowers ca. 2.5 cm in diameter; 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 x 1.4 mm. Filaments longer than petals in staminate flowers, but shorter than petals in hermaphroditic flowers, glabrous. Ovary compressed, hispid, 2-loculared, rudimentary in staminate flowers; style short. Nutlets coriaceous at base and encircled by coiled wing, 5-6 cm in diameter.
中国植被图（地图版） (1:1,000,000)

说明：在地图上点击图例即可获取当前位置的植被信息。地图右上角可以清除植被图层查看地名信息。滑动鼠标或者点击右上角图例可以调整地图比例尺。

植被图使用说明：TMS接口请用方法见该图。

03 Special resource——Chinese vegetation

中国植被图（1:100万）在线系统

充分针叶林

针叶林

芝叶林

灌木丛

藤本

花

果实

种子

根

茎

叶

果实

植物

1. 长白山山幅生1800m的油松（Pinus tabuliformis），辽东栎（Quercus liaotungensis）林（马子清）

2. 针叶林优势种类：

油松（Pinus tabuliformis）

赤松（Pinus koraiensis）

落叶松（Larix gmelinii）

白桦（Betula platyphylla）
Special resource——Species Seed

12,844 species  42,000 photos
Special resource——animals with 720° views

Psarisomus dalhousiae dalhousiae

Eupatoru sukkiti Miyashita & Arnaud

Marmota himalayana robusta Milne-Edwards
Special resource——Fine anatomy
Special resource——Infrared images of wild animals
Special resource——Exquisite minerals and crystals

Gems

Mineral Crystal Ornamental Stones
The only polar specimen repository in China. 7,000 specimens —— all the specimens collected by Chinese scientists in the North and South Pole.
04 Tool——Identifying plants

- Automatic identification
- Covered over 10,000 species
- Training images provided by CFH
- Accuracy is higher than 92%
- 8,000,000 users

Xing Se app

- take a picture
- identify a species
- flower map
Tool—Identifying plant specimens

- 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)
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.
Outlook

More digitalized specimens
More data analysis and mining
More service

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Thanks!