



The establishment of a Large Mapped Forest Plot (20 ha)

Jointly arranged in early 2006 by XTBG and the Administrative Bureau of Xishuangbanna National Nature Reserve (XNNR), a Large Mapped Forest Plot (20 ha) for Long Term Forest Ecosystem Studies had been set up in the tropical rainforest of Xishuangbanna, southwest China's Yunnan Province.



Physiognomy of the large mapped forest plot

XTBG invests ten million RMB for equipment procurement

In 2007, XTBG spent 10 million RMB on equipment procurement to improve and enhance the Science & Technology innovation abilities in the research institution. Discussed by the XTBG academic committee, a list of equipment proposed by each research team has been prioritized, which are expected to be procured and installed in 2008.



International cooperation will be initiated in this area



XTBG staff do topographic survey

Conferences and Symposia

Workshop on Digital Botanical Gardens

Sponsored by XTBG, the two-day Workshop on the Establishment of Digital Botanical Gardens was held on 5th-6th June 2007. "Botanical gardens are rich in living plants and play an important role in *ex situ* conservation and biodiversity preservation. Digital botanical garden is a virtual representation of the reality that enables people to explore and interact with various kind of information collected about botanical gardens", said Dr. CHEN Jin, director of XTBG in his opening remarks for the opening ceremony. There were 53 representatives, including staff from Kew Gardens, 3 universities and 12 botanical gardens in China attended the workshop. Fourteen reports were delivered and three group discussions were held at the workshop. Such issues as the unified standard of plant information records, accuracy of plant mapping (positioning), materials for plant labels, application of radio frequency identification (RFID) technology and intelligent information capturing, and so on, were discussed. Some fruitful results had been reached:

- A BBS forum for digital botanical gardens was to be established;
- A union for digital botanical gardens was proposed;
- An information sharing platform for *ex situ* plant conservation among Chinese botanical gardens was planned.



Participants of workshop on Digital Botanical Garden



Participants testing portable data collection system in the field



CTFS-AA International Field Biology Course 2007

Hosted by XTBG, the annual field biology course of the Center for Tropical Forest Science-Arnold Arboretum Asia Program (CTFS-AA) in collaboration with institutional partners in South and South-east Asia was held from 2nd September to 14th October in Xishuangbanna.

The opening ceremony was presided over by Prof. HU Huabin. Dr. CHEN Jin, Director of XTBG, delivered a welcome address. Dr. Rhett Harrison (Smithsonian Tropical Research Institute and course organizer), and Asso. Prof. YANG Xiaodong (XTBG, local co-organizer) introduced the aims and activities of the training course. Deputy Director of Xishuangbanna National Nature Reserve LIU Linyun was invited to make a speech. Two media agencies covered the opening ceremony.

Twenty students from 11 countries took part in the course offered by fourteen national and international resource staff on a range of topics, from plants and insects, plant community dynamics, soil ecology, plant ecophysiology to plant-animal interactions, and completed two independent short research projects during the six-week course. In addition to activities at XTBG, the trainees visited the *Parashorea* forest in Bubang, where XTBG recently established a 20-ha forest plot, and spent 10 days at the montane forest field station at Ailoshan. As the first such field course ever held in China, the CTFS-AA 2007 aimed to provide high level training in field biology of tropical forest by making use of the unique and rich natural conditions of Xishuangbanna.



Participants to the training course



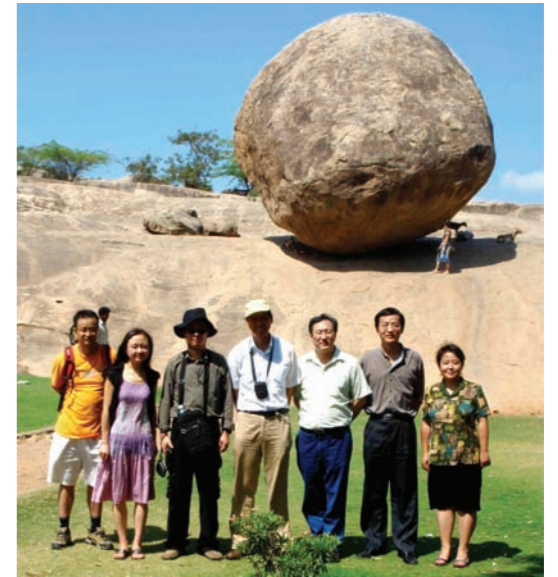
Field experiment by participants



CTFS2007

Inaugural Conference of ATBC-Asia

The Asian Chapter of ATBC was launched in Kunming on 18th July 2006 and Dr. CHEN Jin, director of XTBG, was elected as the founding president of ATBC Asian Chapter. The inaugural meeting of ATBC Asian Chapter was held in India from 3rd to 6th March. The theme of the inaugural conference was "Averting Biodiversity Meltdown in the Asian Tropics", focusing on the common problems of biology and conservation in Asian tropical ecosystems. Dr. CHEN delivered an inaugural speech and 3 XTBG scholars made thematic reports at the conference.



Delegations from XTBG attend the inaugural meeting of ATBC Asian Chapter

ATBC 2007

During 15th -19th July, the annual meeting of ATBC 2007 was held in Morelia, Mexico. Deputy Director Dr. CAO Min led a 5-person delegation to participate in the meeting. The theme of ATBC 2007 was "Linking tropical biology with human dimensions". Prof. CAO Min, Prof. LI Qingjun and Asso. Prof. SHA Liqing made presentations during the respective thematic sessions. Prof. LI Qingjun also co-organized a symposium entitled "Diversity and Evolution of Pollination and Mating Systems of Tropical Plants" with Dr. W. John Kress of National Museum of Natural History. Three posters were submitted by XTBG staff studying in America. Prof. CAO Min also attended the board meeting of ATBC and Prof. LI Qingjun, being a subject editor of *Biotropica*, took part in Editorial Board meeting. After the conference, two workshops: "Application of Stable Isotope in Tropical Biology Studies" and "Application of Acoustic Methods to Monitoring Behaviors of Bats" were held.



Participants of XTBG to ATBC 2007



Seminar on biodiversity: meeting the challenges in the new millennium

During 16th -19th November, co-organized by Ecological Society, Botanical Society and Entomological Society of Yunnan Province, the first academic annual conference was jointly held in Jing Hong, capital city of Xishuangbanna. Nine keynote presentations and over thirty group sessions were made, focusing on the topic "Biodiversity: Meeting the Challenges in the New Millennium". This interdisciplinary seminar provided a new platform for academic exchanges, which aroused positive comments among the participants. Fourteen postgraduate students from the three academic societies made presentations at the conference. XTBG's YANG Pei, SONG Bo and ZHOU Youbing were among the five prize winners. Chairmen of the three academic societies, Dr. CHEN Jin of Ecological Society, Dr. LI Dezhu of Botanical Society, and Dr. WANG Wen of Entomological Society delivered a series of lectures. HUANG Shan, Xishuangbanna vice governor was invited to the opening ceremony.



Opening ceremony of the seminar



Prizes awarded to postgraduate students for best presentations

Other workshops

Entrusted by the Department of Life Science of National Science Foundation of China (NSFC), during 25th -29th December, XTBG organized a symposium on the end-of-term evaluations for NSFC Distinguished Young Scholars programs started in 2003, which brought together more than 100 participants.

During 6th -9th February, a directorial meeting of South East Asia Botanical Gardens (SEABG) was held in Singapore Botanical Gardens. XTBG director Dr. CHEN Jin and Dr. HU Huabin attended the meeting on invitation.

On 15th May, a workshop of CAS Botanical Gardens Committee was held in Beijing. The meeting was aimed at the establishment of National Botanical Garden Network in China. Participants discussed the primary scheme for establishing the network. Dr. CHEN Jin and Dr. HU Huabin attended the meeting.

During 18th -19th October, the Buffon International Symposium was held at the French Muséum national d'Histoire naturelle (National Museum of Natural History) in Paris. Among the 9 invited speakers, Dr. CHEN Jin delivered a speech entitled "Make Natural History Institutes more relevant to local communities" at the symposium.

Organized by the CAS Bureau of Life Science & Biotechnology, a meeting for the directors of CAS Botanical Gardens (CASBG) was held at XTBG on 5th December, which brought together directors from 8 CAS Botanical Gardens.

On 11th December, a symposium on the development of energy plants was held at XTBG. About 40 researchers from CAS botanical institutions and

Guizhou University took part in the meeting. Dr. CHEN Jin briefed the meeting on research advancement in energy plants at XTBG, especially on the physic nut tree (*Jatropha curcas*). Senior officials from CAS Bureau of Life Sciences & Biotechnology attended the meeting and made important remarks.



Dr. CHEN Jin, Director of XTBG, delivering a speech at Buffon International Symposium

HORTICULTURE

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In 2007, over 2,795 species were introduced from home and abroad. Currently there are 11,700 species of plants grown in 36 living collections in the garden.

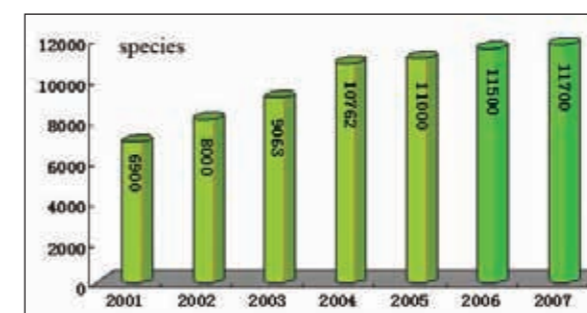


Figure1 Plant species conserved at XTBG by year

Completion of the second-phase knowledge innovation program “Capability enhancement for species conservation and sustainable development”

Supported by the Chinese Academy of Sciences, the project was commenced in 2005 with the objectives of improving the capabilities for species conservation and sustainable development.

According to the project contract and the master plan of XTBG, the achievements of the implementation of the project include:

- Enriched plant species by 2,795 accessions, as a result, the botanical garden holds rich collections of *Palmae* (458), *Zingiberaceae* (170), *Araceae* (200), *ficus* (150) etc.
- The total plant species in all living collections have reached 11,700 species (taxa), therefore, XTBG has become one of the botanical gardens in the world with the richest accessions.

- Research on plants in *Zingiberaceae* and *Ficus* have aroused significant attention in the world.
- Created a Tropical brilliant flower garden, and expanded the collections of *Palmae*, *Zingiberaceae*, *Araceae*.
- A total area of 33.3 hectares were established for the new collections; Claimed land of 10.38 hectares for the new entrance area, and added additional 225 hectares of limestone forests for *in-situ* conservation. Therefore, significant changes have occurred in garden size and field conditions for the living collections as well as landscape.
- Contributions to the development of local economy include provision of new economic plants for commercial development, such as *Bothrocaryum controversum*, *Dracaena cochinchinensis*, *Piper hispidenervum*, and *Tectona grandis*. The total land area planted to the above mentioned plants reached 4,000 hectares. Another 14 economic plants were identified and selected from 34 candidate species which are of potential economic valuable. *Jatropha curcas* was considered to be an important fuel plant.
- Visitors to the garden has increased from 470,000 in 2004 to 650,000 in 2006, thus significantly stimulates the tourism industry of Yunnan Province;
- Accomplished digital platform to collect, manage and share plant information in the garden, which has been recognized by the colleagues in the country. The progress of digital garden system can be considered as an example to lead the future establishment of national botanical gardens information system.
- Other achievements include published papers, monographs, authorized patents, certificates of new varieties, as well as awards.



Establishment of the tropical brilliant flower garden

Through more than 600 days of implementation from February 2006 to October 2007, an area of 23.5ha (353 mu) in the western part of the garden when entering from the new entrance, have been successfully converted into a new collection for tropical flowers. More than 30,000 plants of 450 species from 37 families were planted in this collection. Within this area, there are 9 cascading ponds, and some small bridges, cottages, pavilions as well as flower shelves. It has become a new attraction for visitors.

Expansion of palm garden

From April to October 2007, a total area of 5.3 ha (80 mu) adjacent to the south of palm garden have been converted to simulate wetland environment for palms requiring special habitat conditions. Ethnic cottages and bridges are also built within the area. A small water fall is created for water recycling. Over 70 species of aquatic plants and 51 palm species have been introduced. To date, there are 458 palm species in palm collection.

Enlargement of the *Zingiberaceae* garden

The *Zingiberaceae* garden has expanded by 2 ha (30 mu) with improved road (trail) accessibility.

New entrance to the garden

The new entrance area is under construction with parking areas, souvenir shops etc. It is expected to put into use in the middle of 2008.



PUBLIC EDUCATION

Public education is one of the three major tasks of XTBG. In 2007, a series of activities in terms of exhibitions, TV programs, training courses, reports, photography contest etc, have been organized by XTBG. Based on its special contributions to the tourism of Yunnan, XTBG has been honored with "The most attractive scenic area for visitors" by Yunnan Province.

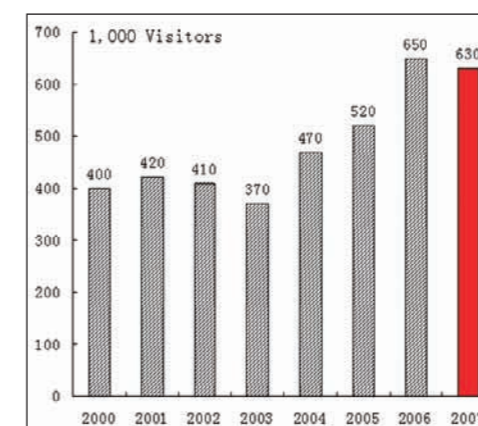


Figure 2 Visitors to the garden by year

Spring Festival holidays

During the one-week long Spring Festival, an average amount of more than 1,000 visitors streamed into XTBG's Tropical Rainforest and Ethnic Culture Museum. Among them a special group was come from Beijing University, the 80-person group, consisted of foreign students from different countries and their teachers, were deeply attracted by the education film "A Deep Journey to the Rainforest" shown in the multi-function room of the museum. The film lead the audience to roam about Xishuangbanna's tropical rainforest & the unique ethnic culture. Strong interests were aroused among the audience to protect the beautiful nature.

National Science and Technology Week

During the National Science and Technology Week from 19th to 25th May, combined with the International Biodiversity Day on 22nd May, XTBG and the Millennium Seed Bank of Kew co-organized a simultaneous exhibition focused on biodiversity conservation through sharing posters both at XTBG and Kew, an official opening ceremony was held at the Millennium Seed Bank. At XTBG, Asso. Prof. PENG Yanqiong delivered a lecture entitled "The importance of *Ficus spp.* and their pollinators in tropical rainforest" to the audience.

TV program: Stories from the Rainforest

Co-sponsored by XTBG, Xishuangbanna Forestry Bureau and Xishuangbanna TV station, a TV program series named "Stories from the Tropical Rainforest" for public education has been formally broadcasted every Tuesday and Thursday on Banna TV1 since 2nd October. The inaugural ceremony was held on 21st September in Jing Hong, capital city of Xishuangbanna. XTBG director Dr. CHEN Jin lyrically addressed the ceremony. He said that the opening of this public education column was aimed to increase the public awareness to care for rainforest and nature, and to maintain the permanent impression of Xishuangbanna as a gorgeous and harmonious beautiful homeland. The educational column focused on telling stories about the indigenous people and the ecosystem of rainforest through narrating and describing in Chinese and ethnic languages of Dai and Hani. Through one year's hard work, one third of the 108 episodes TV program has been finished, and it is expected to be completed in two years.



Exhibitions in Hongkong

Co-organized by XTBG and Hong Kong Kadoorie Farm & Botanic Garden (KFBG), the 3-month public education exhibition named "CONNECTIONS: Tropical Rainforest and People" was grandly opened at KFBG on 2nd December. The exhibition centered on the mysterious tropical rainforest and colorful ethnic cultures of Xishuangbanna, which brings Hong Kong people to have a better understanding on Xishuangbanna, the kingdom of plants and animals, and its rich unique tourism resources. Some high-ranking officials of Hong Kong were present at the opening ceremony. Mobile exhibitions in universities in Hong Kong were also planned.



Participant delegates of the exhibition



Exhibition hall

Seek through the tropical rainforest

The project was sponsored by Chinese Digital Science and Technology Museum Program in 2007, aiming to establish a virtual and fictitious paradise for teenagers to explore the mystery of the tropical rainforest. The design of the experience area focuses on a central ideal "trainees go first"; trainees will be led through a tropical rainforest from macrocosm to microcosm, so as to arouse realization and understanding of the importance of the tropical rainforest and biodiversity conservation among them, and to voluntarily protect the ecological environment.

PARTNERSHIP

Work report



Work report meeting



Mr. LIU Ping (left 3), Vice Governor of Yunnan Province, paid an on-site inspection to XTBG

On 6th December, Mr. LIU Ping, Vice Governor of Yunnan Province, paid an on-site inspection to XTBG, focusing on the tourism development and promoting Menglun Township as a highlighted future Tourist Destination. Dr. CHEN Jin delivered a work report on the achievements and future plans of XTBG. In recognition of the hard work, the Vice Governor also expressed his ardent expectations. Mr. LIU said XTBG should put the master plan into practice, improve the landscaping, and enrich cultural connotations. "XTBG is expected to play a leading role and become a model in the second phase of tourism promotion in Xishuangbanna, and contribute to turn Xishuangbanna into a real origin of Dai ethnic culture, a place for insulation from cold, and a natural oxygen bar", Said Mr. LIU, the Vice Governor.

The Vice Governor's entourage included Xishuangbanna CPC Secretary Mr. JIANG Pusheng, Governor Ms. DAO Linyin and government officials at different levels.