

# Center for Integrative Conservation Annual Report 2018



**Center for Integrative Conservation**

**Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences**

**<http://cic.xtbg.ac.cn/>**

**Cover picture:** the Dai holy hills in Xishuangbanna are sacred forests protected by customary law. Although most have been reduced in area and disturbed to varying extents, they are often the only remaining natural forest in a deforested landscape, as shown in this drone shot of Manyanguang holy hill provided by Liu Jing-Xin. The flora of this forest was first inventoried by CAS in 1959-1960 and has been studied by Prof. Zhu Hua since 1997.

**Thank you Jingxin Liu, Ada Chornelia, Jianmei Lu, Bin Yang, and CIC research groups for providing the pictures!**



*Apios chendezhaoana*



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## 1. CIC Introduction

The Center for Integrative Conservation (CIC) was established in 2012 to bring together scientists at XTBG working on topics related to the conservation of species and ecosystems. It aims to combine and coordinate state-of-the-art techniques in ecology, biogeography, climate change biology, systematic, genomics, remote sensing, and spatial modeling into an effective tool for conservation. The main focus is on tropical China and Southeast Asia, but the CIC also aims to contribute to national and global conservation strategies.

There are 33 staff in the CIC, including 9 professors. The current CIC director is Professor Richard Corlett. At the end of 2018, there were 54 graduate students, including 26 PhD students and 28 MSc students. Of the graduate students, 22 came from outside China, as well as 8 of the 10 postdocs. 8 students graduated in 2018, 3 with PhDs and 5 with MScs. Three postdocs passed the final appraisal.

In 2018, a total of 36 on-going projects were conducted in the CIC, with total contract funding of 24.7 million RMB and allocated funding of 6.86 million RMB. There were six international cooperation projects with 2.6 million RMB in contract funding.

A total of 82 papers were published in 2018. Out of these, 31 SCI papers had a CIC member as first author, 47 SCI papers did not, and 4 papers were published with CIC first authors in Chinese journals. The cumulative impact factors of papers with a CIC first author was 142.13; 67.7% were Q1 and 19.4% were TOP 10.

## 1. CIC Introduction

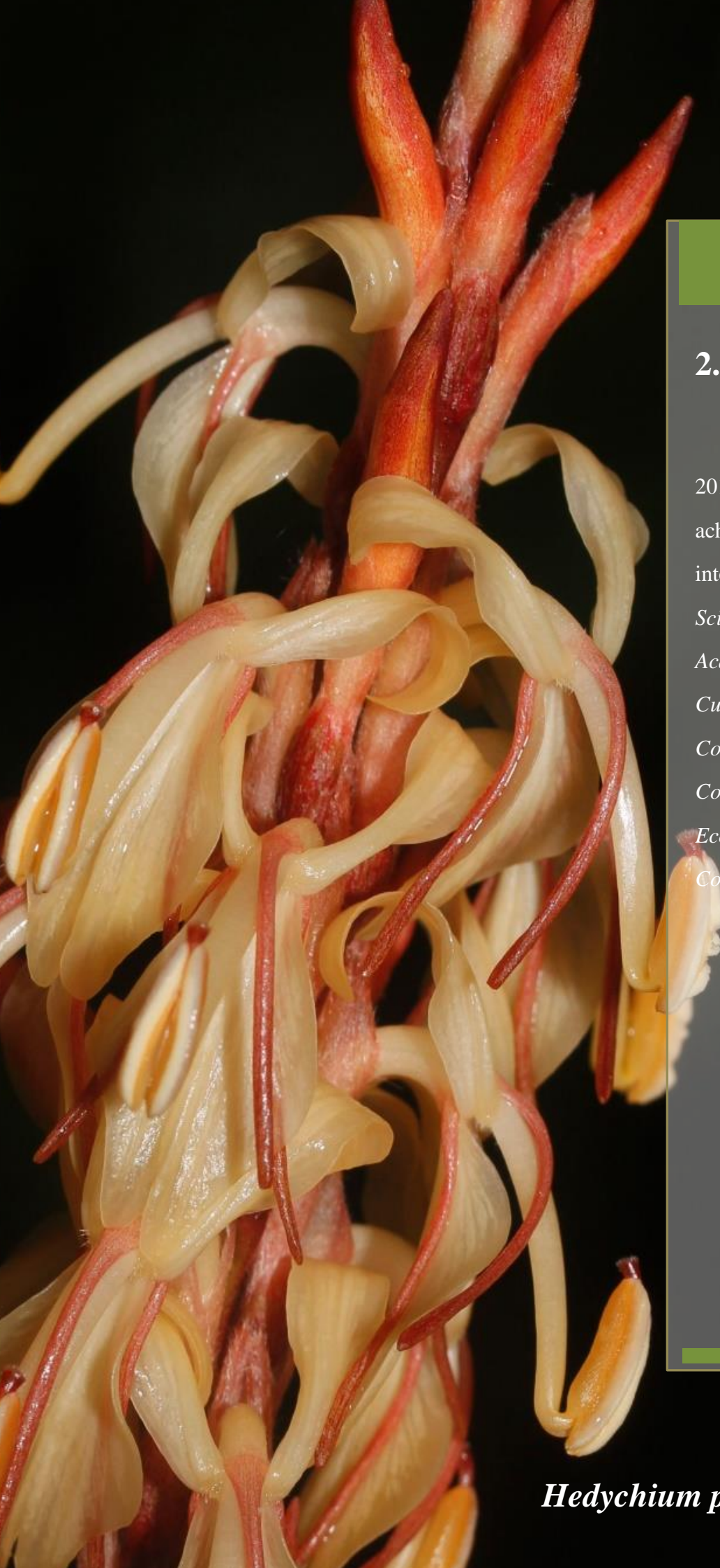
The CIC consists of seven Research Groups and the Specimens and Germplasm Conservation Center, which includes the XTBG Herbarium (HITBC) and the Tropical Plant Germplasm Resource Bank, both of which combine practical support roles with their own research.

Research in the CIC covers a range of disciplines, including conservation biology, plant taxonomy and phylogenetics, plant and animal ecology, animal behaviour, biogeography and macroecology, global change biology, and seed science.

The major outputs from the Center include scientific publications, demonstration projects, practical advice, technical training, and policy papers for the government.



*Phoebe zhennan*



## 2. Scientific research

The CIC had a very successful 2018, with significant research achievements published in major international journals, such as *Science*, *Proceedings of the National Academy of Sciences of the USA*, *Current Biology*, *Nature Communications*, *New Phytologist*, *Conservation Letters*, *Behavioral Ecology and Biological Conservation*.

*Hedychium putaoense*

## Jumping Spider Provides Milk and Prolonged Parental Care for Young

In a study published in the journal *Science* on November 30, researchers at the CIC reported milk provisioning in *Toxeus magnus* (Araneae: Salticidae), a jumping spider that mimics ants.

The researchers assessed how offspring developed and behaved under maternal care both in laboratory conditions and in the field. No spiderlings were observed leaving the nest for foraging until they were 20 days old, yet they grew continuously during this period.

Closer observation revealed that the mother provided a seemingly nutritive fluid, hereafter called milk, to the offspring. Milk provisioning in *T. magnus* involves a specialized organ over an extended period, similar to mammalian lactation. Observations under the microscope showed droplets leaking from the mother's epigastric furrow where the spiderlings sucked milk.

The spiderlings ingest nutritious milk droplets secreted from the mother's epigastric furrow until the subadult stage (around 40 days). If blocked from obtaining milk, the newly emerged spiders will stop development and die within 10 days, showing that milk is indispensable for offspring survival in the early stage.

Next, the researchers tested why parental care and milk provisioning were continued after 20 days, when the spiderlings were able to forage for themselves. The mother continued nest maintenance throughout, carrying out spiderlings' exuviae and repairing nest damage. When receiving both maternal care and milk, 76% of the hatched offspring survived to adulthood (around 52 days). Milk provisioning after 20 days did not affect adult survivorship, body size, sex ratio or development time, but the mother's presence played a key role in assuring a high adult survival rate and normal body size. Thus, milk provisioning complemented their foraging in later stages.

Although the mother apparently treated all juveniles the same, only daughters were allowed to return to the breeding nest after sexual maturity. Adult sons were attacked if they tried to return. This may reduce inbreeding depression.



These findings show that in this jumping spider species, the mother invests much more than the male invests, predicting a female-biased sex ratio to be optimal for reproductive success with a polygamous mating system.

“Our findings demonstrate for the first time that mammal-like milk provisioning and parental care for sexually mature offspring have also evolved in invertebrates,” said Dr. CHEN. “We anticipate that our findings will encourage a reevaluation of the evolution of lactation and extended parental care and their occurrences across the animal kingdom.”

This finding has been reported by about 17 central media in China, such as CCTV, People’s Daily, and Xinhua News Agency, as well as foreign media in many countries.



CCTV



People’s Daily



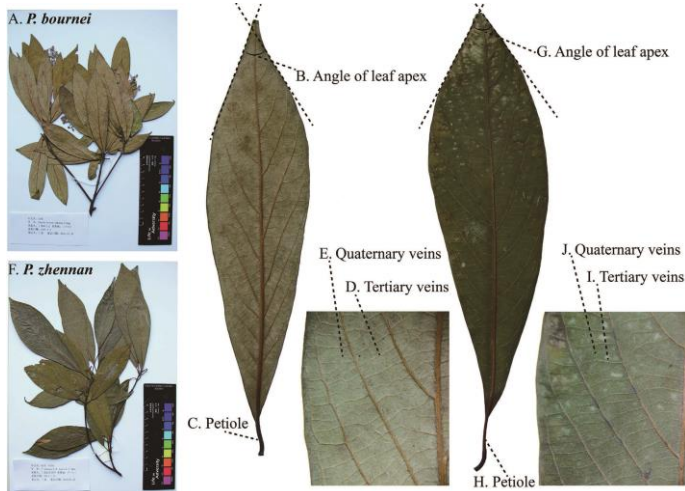
Washington Post



CAS website

## Morphological analysis and molecular evidence delineate two controversial gold-thread nanmu species

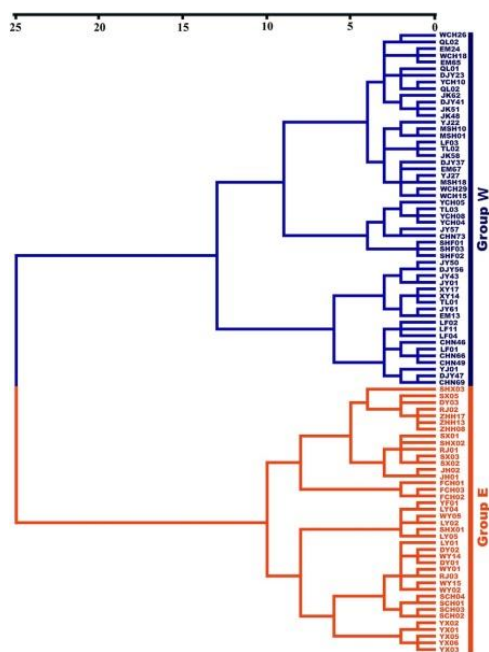
Gold-thread nanmu is a highly valuable timber well-known for its durability, unique special fragrance, and attractive golden color. The main sources for gold-thread nanmu are species of *Phoebe Nees* (Lauraceae). *Phoebe bournei* and *P. zhennan* have been regarded as the best sources due to their tall and thick trunks and exceptionally high quality timber. However, the delimitation of these two highly valued gold-thread nanmu species has been confusing and debated.



Distinctive morphological field characters between *P. bournei* and *P. zhennan*

Researchers from Xishuangbanna Tropical Botanical Garden (XTBG) integrated morphology and restriction site-associated DNA sequencing (RAD-seq) to define the species boundaries of *P. bournei* and *P. zhennan*.

The researchers delineated the geographic distribution using occurrence data of herbarium specimens and their field investigations, and undertook analyses of morphological features and RAD-seq data for



Phylogenetic tree based on RAD-seq data

samples of the *P. bournei* and *P. zhennan* complex, representing their entire distributional areas.

They found that the character “extension of cymose panicles” was ambiguous and apparently affected strongly by local growing conditions. They also found that the petioles of *P. bournei* are thicker than those of *P. zhennan*. Leaf shape also differed, with the angle of the leaf apex being acuminate (wider) in *P. zhennan* and acute in *P. bournei*. In general, *P. bournei* has thicker petioles, narrower leaf, and more prominent tertiary and quaternary veins compared to *P. zhennan*, thus allowing for more sustainable management of gold-thread nanmu resources.

The two species are now distinct in their distributions except for overlapping in the Wuling Mountains. Central Fujian, southern Jiangxi, the Nanling Mountains, and Wuling Mountains are centers of distribution of *P. bournei* (abundant); the adjoining eastern regions of the Qionglai Mountains, southern Sichuan hills, and Wuling



Mountains contain the best remnants of *P. zhennan*. The researchers suggested that the distribution regions should be the priority of conservation areas.

The study entitled “Congruent Species Delimitation of Two Controversial Gold-thread Nanmu Tree Species Based on Morphological and RAD-seq Data” has been published online in *Journal of Systematics and Evolution*.

### Taxonomic status and distribution of *Mirabilis himalaica*

*Mirabilis himalaica* (Edgew.) Heimerl is a plant from the family Nyctaginaceae, distributed in the Himalaya region. The dried roots of this species have been used as traditional Tibetan medicine, and it can cure nephritis, kidney stones, joint pain and uterine cancer.

The systematic position of *M. himalaica* has been discussed for a long time, and there are two distinct treatments: 1) classified as

*Mirabilis* and containing two variants:

var. *himalaica* (northern India and Tibet, China) and var. *chinensis*

Heimerl (China); 2) using the

scientific name *Oxybaphus*

*himalaicus* Edgew. placed in the

genus *Mirabilis*, also contains two

variants: var. *himalaicus* and var.

*chinensis* (Heimerl) DQ Lu. At the

same time, due to the extremely rich intraspecific morphological variation,

the system classification of *M. himalaica* has critical problems. In addition, this species is the only species of the New World distribution of *Mirabilis* in the Old World. This Asian-North American distribution pattern has become one of the famous intercontinental discontinuities of *Mirabilis*.



The researchers from the Plant Phylogenetics and Conservation Group of the CIC, the Research Institute of Tibet Agriculture and Animal Husbandry, and the University of Adelaide, Australia have sampled this species in China. The systematic position of *M. himalaica* and historical biogeography of *Mirabilis* and related genera was evaluated using two loci (nrITS, rps16), with divergence times estimated using ITS sequences. All 16 sampled provenances of *M. himalaica* formed a strongly supported terminal clade and at the sectional level formed a clade with sect. *Quamoclidion sensu stricto*, despite their morphology. Sect. *Oxybaphoides* and sect. *Oxybaphus* were not closely related to *M. himalaica*, suggesting their apparent morphological similarities are convergent. BEAST analysis and ancestral area reconstruction indicated that *M. himalaica* separated from related North

American species during the late Miocene to early Pleistocene ~5.22 Ma (95% HPD: 2.53–8.18). Both migration via the Quaternary Bering land bridge (Beringia) and long-distance dispersal may have contributed to the present-day disjunction between *M. himalaica* and the American species.

The study entitled “Taxonomic status and distribution of *Mirabilis himalaica* (Nyctaginaceae)” has been published online in *Journal of Systematics and Evolution*.

### Researchers propose three approaches to increase public awareness of biodiversity protection

Plant species are of considerable concern to biologists and conservationists in biodiversity research and conservation planning.

During the field survey in 2016, researchers from the CIC found a population of the primitive fagaceous species, *Trigonobalanus verticillata* in the Xishuangbanna tropical rainforest. The adult individuals of *T. verticillata* were about 200. However, they found the adult plants of *T. verticillata* had fallen to about 30 individuals in their second field survey in 2017. The species now faces extinction in the region due to the expansion of the tea cultivation.

This raised the question what appropriate conservation strategies can be developed to ensure the balance of economic growth and biodiversity conservation.



*Trigonobalanus verticillata* first found in XSBN and the habitat approaches to increase public awareness of biodiversity protection and conservation.

“The impacts of economic development on rare plants and their habitats, particularly where rare species are disappearing almost as they are discovered, need to be recognized and addressed before these potential resources are lost forever”, said Prof. LI Jie, principal investigator of the study.

Integrating conservation assessments of the rare plants in tropical China and the experience in biodiversity conservation, XTBG researchers proposed three

They suggest that the combination of *ex situ* conservation on “safe sites,” a well-managed system of protected areas for in situ conservation, and in-depth surveys to identify species and habitats in need of management, are necessary to protect rare and endangered plants.

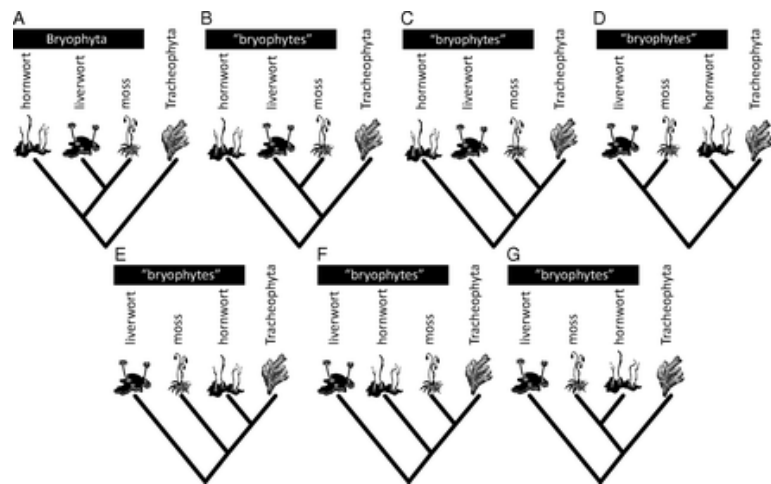
The study entitled “Conflict between biodiversity conservation and economic growth: insight into rare plants in tropical China” has been published online in *Biodiversity and Conservation*.

### Study: land plants first appeared about 500 million years ago

The establishment of plant life on land is one of the most significant evolutionary episodes in Earth history. Although the megafossil record provides unequivocal evidence of plant life on land, the early fossil record is too sparse and biased by the non-uniformity of the rock record to directly inform the timing and sequence of character acquisition in the assembly of plant body plans.

Researchers from UK and China attempt to establish a timescale of early land plant evolution that integrates over the contested topological relationships among bryophytes and tracheophytes. Prof. Harald Schneider of Xishuangbanna Tropical Botanical Garden (XTBG) is one of the two corresponding authors of the study.

The researchers reported in the *Proceedings of the National Academy of Sciences of the United States of America* that land plants first appeared about 500 million years ago, during the Cambrian period (occurring from 570 million to 500 million years ago), when the development of multicellular animal species took off.



The seven alternative hypotheses considered in the dating analyses

The researchers integrated genomic data together with fossil presence and absence evidence in a previously not-achieved robust analysis of the relationships and divergence times of early land plants. They constructed 37 fossil calibrations with minimum and soft maximum constraints, following best practice.

They found that topology and dataset size have minimal impact on age estimates, but slightly more variance in clade age estimates occurred when using alternative calibration strategies.

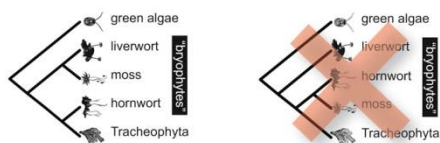
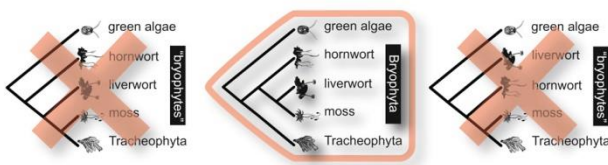
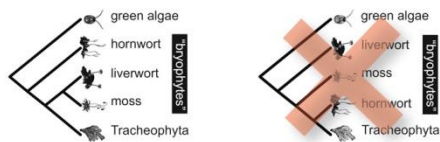
They concluded that embryophytes emerged within a middle Cambrian to Early Ordovician (beginning 488.3 million years ago and ending 443.7 million years ago) interval and, regardless of topology, all four major lineages of land plants had diverged by the late Silurian (443.7 to 416.0 million years ago).

## Setaphyta: a new family tree given to plants

The evolutionary emergence of land plant body plans transformed the planet. However, our understanding of this formative episode is mired in the uncertainty associated with the phylogenetic relationships among bryophytes (hornworts, liverworts, and mosses) and tracheophytes (vascular plants).

Researchers from UK and China shows that the first plants to conquer land were a complex species, challenging long-held assumptions about plant evolution. They report a new family tree 'Setaphyta', which states that the liverworts and mosses are now united in a new group, in *Current Biology*. Prof. Harald Schneider of Xishuangbanna Tropical Botanical Garden (XTBG) is one of the three corresponding authors of the study.

By modelling the molecular sequences of modern plants, the researchers analyzed a large transcriptomic amino acid alignment from 103 species of algae (Chlorophyta and Streptophyta) and Embryophyta (mosses, hornworts, liverworts, and tracheophytes).



They used an extensive molecular dataset and sophisticated models for evolution to understand which plant group was the first to conquer the land from their algal ancestry.

The results showed that liverworts are more closely related to mosses than hornworts. The liverworts and mosses are now united in a new group, 'Setaphyta'.

The new family tree of plants with the Setaphyta group shows that liverworts were not the first group to conquer land, and liverwort simplicity reflects the loss of features, not ancestral simplicity.

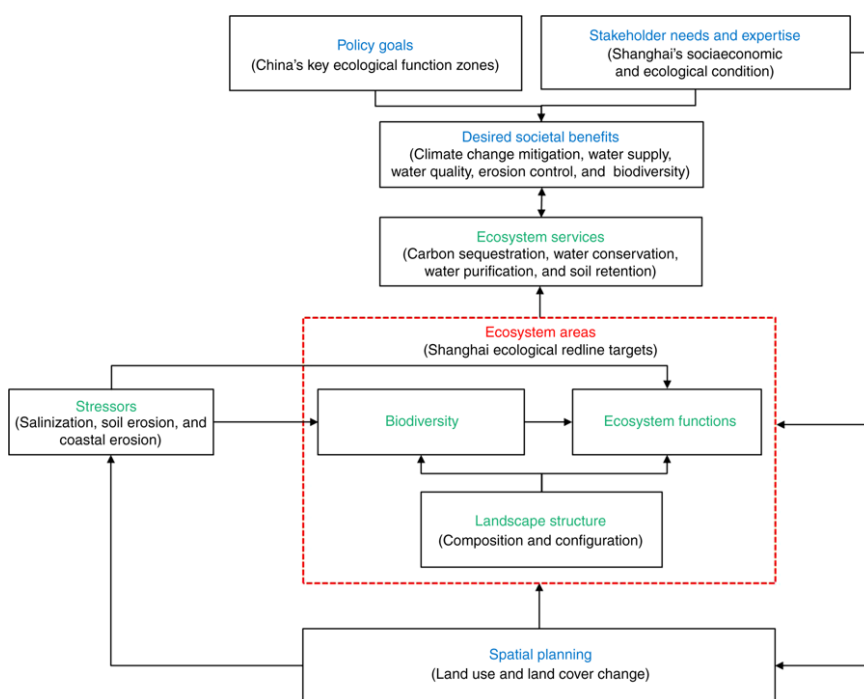
“As our new tree of plant relationships indicates that the first land plants were more complex than liverworts, we will have to re-evaluate our assumptions on the evolution of land plants”, said Prof. Harald Schneider.

## Researchers propose a transdisciplinary framework to determine ecological redline areas in Shanghai

Ecosystem services (ES) assessments offer a means of practicing integrated approaches to address the serious policy challenge of incorporating environmental issues into development decisions. However, there is a fundamental lack of science–policy frameworks, explaining methodological standards for application in policy.

Researchers from Xishuangbanna Tropical Botanical Garden (XTBG) and their collaborators created a science–policy framework that builds upon core elements of other ES frameworks but details both the specific institutional and ecological components (e.g. types of information, indicators, and methodological steps) for public policy. They got their science–policy framework published in *Nature Communications*.

The researchers presented the transdisciplinary framework and methodology for China’s Ecological Redline Policy (ERP), one of the first national policies utilizing multiple ES. The framework details how to incorporate the needs of stakeholders in particular policymakers into the development of the ES science, and illustrate how policymakers can use the science in the policy process.



They proposed five indicators to standardize ecological redline areas (ERA) designation processes: ES hotspots; biodiversity hotspots; ecologically fragile hotspots (vulnerable to stressors); landscape structure (composition and configuration); stakeholder opinions.

They determined a current ecological redline target of 1098 km<sup>2</sup> at the municipal scale. ERAs cover 16% of Shanghai’s total land area,

representing a 174% increase in terrestrial protected area. ES criteria expand ecosystem protection by 142% (681 km<sup>2</sup>).

They also found that ERP significantly increases ES flows compared to other land use scenarios.

“If properly implemented, ERP could potentially reduce the tradeoff between urbanization and ecosystem protection in Shanghai”, said Dr. BAI Yang, the first author of the study. “Our study supports the use of ES information in urban planning for developing more comprehensive plans on ecosystem protection”, added BAI Yang.

The results were published titled Developing China’s Ecological Redline Policy using ecosystem services assessments for land use planning in *Nature Communications*.

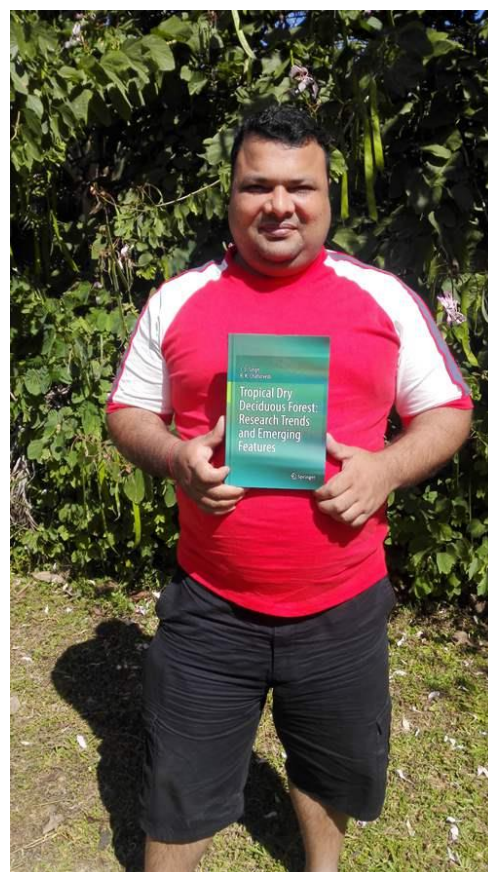
### **New book about tropical dry deciduous forests published**

Dr Ravi Chaturvedi of the Centre for Integrative Conservation at XTBG recently published a book with Professor J.S. Singh (Department of Botany, Banaras Hindu University, India) on the tropical dry deciduous forests of the world, entitled: “**Tropical Dry Deciduous Forest: research trends and emerging features**” (Publisher: Springer-Nature; ISBN 978-981-10-7259-8).

Tropical dry deciduous forests (TDFs) can be found in climates characterized by 5 or more dry months each year, and often on nutrient-poor soils. The extended dry seasons of the climates where TDFs occur select for plants and animals with specific adaptations to survive these conditions.

Deciduousness is a common adaptation among plants. Most of the trees drop their leaves after the rains end, and essentially halt photosynthesis, as they would otherwise be unable to survive the water loss during each dry season.

TDFs are subject to intensive anthropogenic disturbances and are among the most at-risk ecosystems in the world. In order to assess the conservation status of this forest type, information is required on its distribution pattern, climate, the structure and functional traits of its vegetation, phenology, strategies for coping with drought and nutrient poverty, and disturbances and their effects. The authors review important studies on TDFs around the world, particularly those in the northern dry deciduous forests of India, where they have conducted most of their own research.



Dr Chaturvedi is presently a postdoctoral fellow in the Community Ecology and Conservation Group, studying deciduous and evergreen communities in dry forest systems in Yunnan, China.

## New species/genera published in 2018:



狭叶海岛木

***Trivalvaria casseabriae* Y.H.Tan, S.S.Zhou & B.Yang**

*Trivalvaria rubra* is one of two new species of the genus discovered in the northern Myanmar. *T. rubra* is similar to *T. costata* in flower size and petal shape and size, and also shares similarities with *T. macrophylla* in leaf shape, but can be distinguished by its pink flowers, androdioecious breeding system, petals spreading, outer petal lanceolate to narrowly oblong, 14–20 × 4–6 mm, inner petal 17–25 × 4–7 mm, oblong-ovate to ovate-triangular.

(Yang et al., *PhytoKeys*, 2018)



中緬馬兜鈴

***Aristolochia sinoburmanica* Y.H.Tan & B.Yang**

*Trivalvaria casseabriae* is named after the CAS Southeast Asia Biodiversity Research Institute (CAS-SEABRI), to thank them for funding plant diversity research in Myanmar. *Trivalvaria casseabriae* is similar to *Trivalvaria argentea* in leaf shape, but can be distinguished by its larger flower size and its outer petals equal to inner petals.

(Yang et al., *PhytoKeys*, 2018)



红花海岛木

***Trivalvaria rubra* Y.H.Tan, S.S.Zhou & B.Yang**

*Aristolochia sinoburmanica* was collected during a field expedition to Putao, Kachin state, north Myanmar. It is morphologically similar to *A. faviogonzalezii*, *A. hainanensis*, *A. tonkinensis*, *A. saccata* and *A. xuanlienensis*, but differs by its deep purple red perianth, outside densely brown hirsute with parallel dark purple veins. The species epithet *sinoburmanica* refers to the type locality in Myanmar and adjacent regions of China. It also shows that the two countries are friendly neighbours, their friendship being retained over a long period and also expresses the researchers' appreciation for the whole-hearted cooperation amongst members of the China-Myanmar joint expedition.

(Yang et al., *PhytoKeys*, 2018)



葡萄姜花

***Hedychium putaoense* Y.H.Tan & H.B.Ding**

*Premna grandipaniculata* is distinguishable by its huge complicated paniculiform inflorescences. *Premna grandipaniculata* shares the same primary inflorescence structure with *P. bracteata* and *P. interrupta*, but is distinct from the latter two in its spikelike thyrses forming a panicle with tertiary branches (vs. with secondary branches in *P. bracteata*, while without branches in *P. interrupta*) and in having nearly glabrous branchlets, petioles, leaves and inflorescences.

(Tan et al., *PhytoKeys*, 2018)

*Hedychium putaoense* is named after the type locality, Putao county, in Kachin State, Myanmar. It is morphologically similar to *H. densiflorum* Wall. and *H. longipedunculatum* A.R.K. Sastry & D.M. Verma, but it can be easily distinguished by its very small bract (4–6 × 2.5–3 mm vs. 18–19 × 5–5.5 mm and ca. 11 × 7 mm, respectively) and bracteole (2–2.5 × 3–3.5 mm vs. ca. 9 × 2 mm and ca. 6 × 4 mm, respectively), orange flower and broadly falcate to lanceolate lateral staminodes.

(Ding et al., *PhytoKeys*, 2018)



大序豆腐柴

***Premna grandipaniculata* Y.H.Tan & Bo Li**



征镒木属

***Wuodendron* B.Xue, Y.H.Tan & Chaowasku**

*Wuodendron* is distinct in being deciduous, bearing subpetiolar buds and having inflorescences growing from the leaf scar of the dropped leaves. Morphological comparisons and phylogenetic analyses corroborate its recognition as a new genus, which is formally described and illustrated here as *Wuodendron*. Molecular divergence time estimates under an uncorrelated lognormal relaxed clock place the *Wuodendron*-Neotropical clade split within the Miocene (ca. 14–12 Ma), highlighting the importance of post-boreotropical dispersal and vicariance in shaping intercontinental tropical disjunctions in Annonaceae. (Xue et al., *Taxon*, 2018)





少花风筝果

***Hiptage pauciflora* Y.H.Tan & Bin Yang**

*Hiptage ferruginea* is similar to *H. calcicola* in its elliptic leaf shape, hairy pedicels and calyx without glands, and suborbicular petals; but differs in having marginal gland dots, without laminal gland dots (vs. without marginal gland dots, with laminal gland dots), pink petals (vs. white) larger size, claw 2.5 – 4 mm (vs. 1 – 2 mm), middle wings of samara obovate (vs. oblong).

(Yang et al., *PhytoKeys*, 2018)

*Hiptage pauciflora* is similar to *H. benghalensis* in elliptic-oblong leaf blades, petal shape and size and also shares similarities with *H. multiflora* in having leaf marginal gland dots, sub-orbicular calyx glands and not decurrent to pedicel, obovate middle wing of samara, but differs from the former by lacking basal glands at the leaf base, calyx glands ovate or sub-orbicular to cordate, scarcely decurrent to pedicel, middle wing of the samara obovate-elliptic, lanceolate bracteoles 7–11 mm (vs. 1 mm); and differs from the latter by its fewer flowers, longer pedicels, without basal glands at the leaf base and elliptic sepals. (Yang et al., *PhytoKeys*, 2018)



锈毛风筝果

***Hiptage ferruginea* Y.H.Tan & Bin Yang**



百年假节蚂蟥

***Pseudarthria panii* Rong Zhang, Ting-Shuang Yi & Bo Pan**

*Pseudarthria panii* is a new trifoliolate shrub species. It resembles *Pseudarthria viscida*, but differs by its taller height, upright habit, late flowering, leaflets with an acuminate apex, longer light purple flowers, longer glabrous fruits, and more seeds. It occurs in the montane forest of China (Yunnan), Laos, Myanmar, Thailand, and Vietnam. Molecular evidence confirms its placement in *Pseudarthria*, which is a newly recorded genus from China, Laos, Thailand and Vietnam. The first collection of the new species can be dated back to 120 years ago, i.e. Augustine Henry's collection in Yunnan during 1896–1899.

(Zhang et al., *Phytotaxa*, 2018)



滇西北马先蒿

***Pedicularis milliana* W. B. Yu, D. Z. Li & H. Wang**

*Apios chendzhaoana* is a new combination derived from *Sinolegumenea chendzhaoana*, recognized by both morphological and molecular evidence. It is also an endemic and endangered species from East and South China. The species is only distributed in the boundaries among provinces of Fujian, Jiangxi, Guangdong, Hunan and others.

(Zhang et al., *Phytotaxa*, 2018)



南岭土圞儿

***Apios chendzhaoana* (Y.K. Yang, L.H. Liu & J.K. Wu)  
Bo Pan, Xun-Lin Yu, & Fan Zhang**



拟倒挂铁角蕨

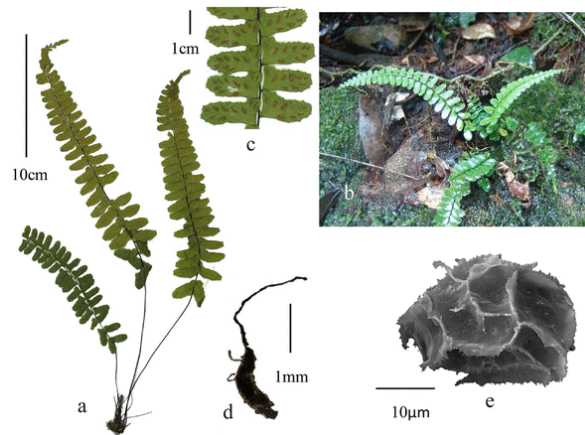
***Asplenium normaloides* Yan Fen Chang &  
H.Schneid.**

*Asplenium normaloides* is most similar to *A. normale* and differs by spores with lophate-perforate perispore and more but shorter sori on the pinnae. It is only known in southeastern China and northeastern Vietnam. The new species grows in soil or on mossy rocks in dense forests at an altitude of 1000–2000 m.

(Chang et al., *Journal Plant Research*, 2018)

*Asplenium guangdongense* is named with the type occurring in the Nanling Nature Reserve, Guangdong. It is similar to *A. normale*, but differs by having no buds on the rachis, broader pinnae with usually more sori, scales on rhizome dark brown with long fibrous apices, and spores with more crests. It is only known in Guangdong Province of southern China. The new species grows on mossy rocks or soil in dense forests at an altitude of about 500 m.

(Chang et al., *Journal Plant Research*, 2018)



广东铁角蕨

***Asplenium guangdongense* Yan Fen Chang & H.Schneid.**



假匍匐膜叶铁角蕨

***Hymenasplenium laterepens* N.Murak. & X.Cheng ex Yanfen Chang & K.Hori**

The European fern flora is arguably one of the best studied floras of the world. However, the application of DNA barcoding and robust taxonomic inference recovered evidence for the need to revise the treatment of European fern diversity. As a consequence, a taxon previously recognized as a subspecies has been recovered to represent a separate species that was named *Asplenium jessenii* H.M.Liu & H.Schneid. in reference to a major contributor to the study of the Central European fern flora.

(Liu et al., *Plant Systematics and Evolution*, 2018)



***Asplenium jessenii* H.M.Liu & H.Schneid.**



克钦木兰

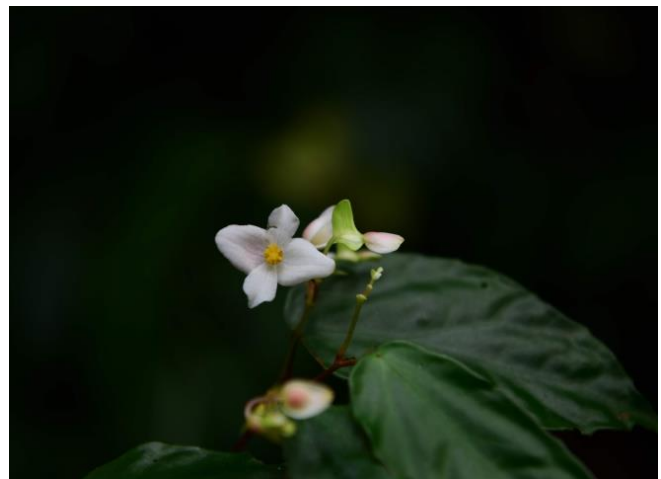
**Magnolia kachinensis S.S.Zhou, Q.Liu & Sima**

*Begonia medogensis* Jian W. Li, Y.H. Tan & X.H. Jin, a new species of Begoniaceae, was described from Medog, Tibet, China and Putao, Myanmar. It has erect stems, is tuberless, has many triangular to lanceolate leaves, base slightly asymmetric, apex caudate-acuminate, margins remotely and irregularly denticulate; staminate flowers have 4 perianth segments, with outer 2 segments broadly ovate, tinted with pink, inner 2 spatulate; pistillate flowers have 5 perianth segments, unequal, outer 4 broadly ovate, tinted with pink, inner 1 spatulate. 2-loculed. Capsule cylindroid, 3-wings, adaxial 1 larger. The new species is assigned to section *Platycentrum* and can easily be distinguished from similar species in the section.

(Li et al. *Phytokeys*, 2018)

*Magnolia kachinensis* is a tree reaching 20 to 35 meters tall. Its diameter at breast height (dbh) is about 50-100 cm, its flowers are strongly perfumed, and its timber is used for making furniture and house building by the local people. It is currently only known from Putao County, Kachin State, Myanmar. So far, it is only known from one locality with less than 50 mature individuals. Thus, the researchers regarded it as critically endangered, according to IUCN Red List Categories and Criteria.

(Zhou et al., *Phytotaxa* 2018)



中緬秋海棠

**Begonia medogensis JianW.Li, Y.H.Tan & X.H.Jin**



*Trivalvaria rubra*

### 3. Projects

A total of 36 on-going projects were conducted in the CIC in 2018, with total contract funding of 24.70 million RMB, and allocated funding of 6.86 million RMB.

There were six international cooperation projects with 2.69 million RMB in contract funding and 0.92 million RMB allocated funding.

26 new projects were applied for in 2018 and there will be 23.38 million RMB for the research.

Unit: 10,000RMB

| NO. | Project name   | Type               | Duration              | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal      |
|-----|--|--------------------|-----------------------|------------------|-------------------------|---------------------------|----------------|
| 1   | Distribution, Diversity and Conservation of Savanna Grassland Ecosystem in Yunnan Province                                   | Yunnan United Fund | 2016/03/29-2019/12/31 | 229.68           | 210.84                  | 66.42                     | Kyle Tomlinson |
| 2   | Study on the Phylogenetic Diversity of Tropical Forest Community Based on DNA Barcoding from Evolutionary Dimension          | General Program    | 2017/10/01-2021/12/31 | 78               | 42.25                   | 3.25                      | Jie Li         |
| 3   | The Influence of Forest Fragmentation on the Rodent-plant Mutual Relation and Its Ecological Significance                    | General Program    | 2017/10/01-2021/12/31 | 74.4             | 52.2                    | 15                        | Bo Wang        |
| 4   | Selection Preference of Rodents in Different Types of Seeds in Different Forest Ecosystems and their Ecological Significance | General Program    | 2015/01/01-2018/12/31 | 86               | 86                      | 0                         | Bo Wang        |
| 5   | The Distribution and Ecological Characteristics of Spiny Plants in Yunnan Province   | General Program    | 2014/10/28-2020/12/31 | 84               | 93.42                   | 0                         | Kyle Tomlinson |
| 6   | Roles of lianas in forest ecosystem food web: a case study in Southwest China  | General Program    | 2016/11/07-2020/12/31 | 73.25            | 55.69                   | 21.6                      | Mareike Roeder |
| 7   | Cultivation and Management of <i>Platanthera</i> in Asia   | General Project    | 2017/01/01-2019/12/31 | 5                | 5                       | 0                         | Jianwu Li      |
| 8   | Study on Vegetation Geography in Yunnan Province   | General Program    | 2015/01/01-2018/12/31 | 80               | 80                      | 0                         | Hua Zhu        |
| 9   | Mapping karst  | Joint              | 2017/01/01-           | 194              | 154.69                  | 67.64                     | Alice          |

| NO. | Project name  | Type            | Duration              | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal   |
|-----|---|-----------------|-----------------------|------------------|-------------------------|---------------------------|-------------|
|     | biodiversity in Yunnan Province   | Program         | 2020/12/31            |                  |                         |                           | Hughes      |
| 10  | Survey and Germplasm Collection of Extremely Small Population Wild Plants in Southwestern Yunnan Province                             | Ministry of S&T | 2017/02/01-2022/01/31 | 256              | 156                     | 78                        | Jie Li      |
| 11  | Study on the horizontal gene transfer between the rootless parasitic plants of Lauraceae and different host plants                    | Youth Fund      | 2016/01/01-2018/12/31 | 24               | 24                      | 1.36                      | Hui Ma      |
| 12  | Evaluation of phylogenetic diversity of tropical forests in Xishuangbanna using database of DNA barcodes                              | Youth Fund      | 2016/01/01-2018/12/31 | 24               | 24                      | 1.36                      | Xiuqin Ci   |
| 13  | Study on Spatial Coupling Characteristics of Supply and Demand of Ecosystem Services  | Youth Fund      | 2016/01/01-2018/12/31 | 22.4             | 22.4                    | 0                         | Yang Bai    |
| 14  | Geographical Distribution Pattern of <i>Engelhardtia roxburghiana</i> and Its Response Mechanism to Climate Change                    | Youth Fund      | 2017/10/01-2020/12/31 | 31.2             | 17.31                   | 1.71                      | Honghu Meng |
| 15  | Relationship between extrafloral nectary secretion and plant sugar transport and contribution of extrafloral nectary to plant defense | Youth Fund      | 2017/10/01-2020/12/31 | 26.4             | 14.51                   | 1.31                      | Fangfang Xu |
| 16  | Phylogenetic Research on <i>Phoebe</i> (Lauraceae)  | Youth Fund      | 2017/01/01-2019/12/31 | 23.88            | 22.56                   | 9.28                      | Yu Song     |
| 17  | Research on landscape   | Local Natural   | 2015/07/01-           | 10               | 10                      | 0                         | Wenjun Liu  |

| NO. | Project name   | Type                                 | Duration              | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal           |
|-----|--|--------------------------------------|-----------------------|------------------|-------------------------|---------------------------|---------------------|
|     | function connectivity dynamics and restoration of forest landscape in Xishuangbanna                | Science Foundation                   | 2018/06/30            |                  |                         |                           |                     |
| 18  | Wild Resource Investigation and Phylogeny of “ <i>Phoebe zhennan</i> ” tree species                | Local Natural Science Foundation     | 2017/06/01-2020/05/31 | 10               | 5                       | 5                         | Lang Li             |
| 19  | Study on the DNA Barcoding of Tropical Important Wood Species and Extreme Endangered Orchid plants | CAS Fund                             | 2017/01/01-2018/12/31 | 50               | 50                      | 25                        | Jie Li              |
| 20  | Western Young Scholar B  | CAS Fund                             | 2016/01/01-2018/12/31 | 15               | 15                      | 5                         | Hui Ma              |
| 21  | 2016 Western Young Scholar A   | CAS Fund                             | 2017/01/01-2019/12/31 | 50               | 40                      | 20                        | Bo Wang             |
| 22  | 2016 Western Young Scholar B   | CAS Fund                             | 2017/01/01-2020/12/31 | 15               | 10                      | 5                         | Honghu Meng         |
| 23  | 2016 Western Young Scholar B   | CAS Fund                             | 2017/01/01-2020/12/31 | 15               | 10                      | 5                         | Yu Song             |
| 24  | Study on the Classification of ferns in Xishuangbanna and tropical regions around                  | CAS Fund                             | 2017/01/01-2019/12/31 | 22               | 22                      | 11                        | Yanfen Chang        |
| 25  | Developing a plant conservation strategy for China and the world                                   | CAS Fund                             | 2017/01/01-2020/12/31 | 250              | 250                     | 0                         | Richard Corlett     |
| 26  | The 4 <sup>th</sup> post-doc training fund, Yunnan Province  |                                      |                       | 16               | 16                      | 8                         | Beng Kingsly Chuo   |
| 27  | The 4 <sup>th</sup> post-doc training fund, Yunnan Province  |                                      |                       | 16               | 16                      | 8                         | Tuanjit Sritongchuy |
| 28  | National Important Wild Germplasm Resources Shared Platform  | National S&T infrastructure platform | 2017/10/10-2020/12/31 | 70               | 100                     | 30                        | Bin Wen             |



| NO. | Project name  | Type                               | Duration              | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal                 |
|-----|---|------------------------------------|-----------------------|------------------|-------------------------|---------------------------|---------------------------|
|     |   | construction                       |                       |                  |                         |                           |                           |
| 29  | Biodiversity conservation in karst areas  | 1-3-5 program                      | 2017/09/25-2020/10/31 | 600              | 200                     | 200                       | Harald Schneider          |
| 30  | Spatial Planning for Protected Areas in Response to Climate Change (SPARC)                            | International Cooperation Project  | 2016/09/01-2018/11/30 | 40.26            | 17.05                   | 9.72                      | Richard Corlett           |
| 31  | Carbon stock and sequestration in pine woodlands of Yunnan  | International Cooperation Project  | 2017/11/03-2019/12/31 | 41.87            | 38.65                   | 3.22                      | Ravi Kant Chaturvedi      |
| 32  | The role of plant architecture in structuring tree  | International Cooperation Project  | 2017/11/03-2019/12/31 | 30.08            | 28.16                   | 1.92                      | Tristan Charles-Dominique |
| 33  | The evolution and ecological significance of spinescence in plants                                    | International Cooperation Project  | 2017/11/03-2019/12/31 | 36.97            | 34.3                    | 2.66                      | Uriel Gelin               |
| 34  | Investigation and study on the diversity of vascular plants in northern Myanmar                       | International Cooperation Project  | 2016/03/29-2019/12/31 | 100              | 55                      | 55                        | Yunhong Tan               |
| 35  | Investigation and Study on Forest Vegetation in Victoria Mountain in Western Myanmar                  | International Cooperation Project  | 2017/10/1-2019/10/30  | 20               | 20                      | 20                        | Shishun Zhou              |
| 36  | The evolution and extinction of several plant groups and their responses to the Asian monsoon climate | National Fund Key Project Subtopic | 2016/1/1-2019/12/31   | 20               | 15                      | 5                         | Qinying Lan               |
|     | <b>2018 New Projects</b>  |                                    |                       |                  |                         |                           |                           |
| 1   | Biogeography and Biodiversity of Pinus dominant savannas and Forests in Southeast Asia                | General Project                    | 2018/10/01-2022/12/31 | 60               | 30                      | 30                        | Kyle Tomlinson            |
| 2   | Youth Innovation Promotion Association  | CAS                                | 2018/01/01-2021/12/31 | 80               | 20                      | 20                        | Honghu Meng               |
| 3   | Study on the Spatial  | Local natural                      | 2018/06/01-           | 10               | 10                      | 10                        | Honghu                    |

| NO. | Project name   | Type   | Duration            | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal             |
|-----|--|--|---------------------|------------------|-------------------------|---------------------------|-----------------------|
|     | Molecular Mechanism of the Tropical and Subtropical Plant <i>Engelhardtia roxburghiana</i>   | funding  | 2021/05/31          |                  |                         |                           | Meng                  |
| 4   | Biodiversity Monitoring and Network Construction in the Minjiang River-Mekong River Basin  | Ministry of S&T Basic Research Project                         | 2018/1-2020/12      | 270              | 270                     | 270                       | Ruichang Quan         |
| 5   | Impacts of climate change on biodiversity and adaptation strategies  | CAS Strategic Pilot Science and Technology Special (Class A)   | 2018/1/1-2022/12/30 | 150              | 150                     | 14.8                      | Alice Hughes          |
| 6   | Impact of backyard landscape and agricultural management on pollinator communication and pollination services in southern China and Thailand | The 63rd China Postdoctoral Science Foundation General Project | 2018/5-2019/4       | 5                | 5                       | 5                         | Tuanjit Sritongchuyay |
| 7   | Canopy Science Research Platform: Phase 2 (purchase equipment)   | CAS  | 2018                | 49.7             | 49.7                    | 49.7                      | Youxin Ma             |
| 8   | Evaluation of ecosystem service function in Taihu Lake Basin   | Horizontal Fund of Nanjing Lake Institute of CAS               | 2018                | 4                | 4                       | 4                         | Yang Bai              |
| 9   | Micro-habitat selection of rodents in seed storage sites and the ecological significance   | General project  | 2019/1/1-2022/12/31 | 60               | 30                      | 30                        | Lin Cao               |

| NO. | Project name   | Type                                | Duration              | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal        |
|-----|--|-------------------------------------|-----------------------|------------------|-------------------------|---------------------------|------------------|
|     | in tropical rain forest  |                                     |                       |                  |                         |                           |                  |
| 10  | Selection of microhabitats of seed storage sites in rodents in tropical rain forests and its ecological significance                                     | Local funds                         | 2018/06/01-2021/05/31 | 10               | 10                      | 10                        | Lin Cao          |
| 11  | Yuxi Yubaiding Nature Reserve Comprehensive Scientific Investigation Project Cooperation Agreement   | Other Fund                          | 2018/01/01-2018/12/31 | 12               | 12                      | 12                        | Ruichang Quan    |
| 12  | Animal Diversity and Conservation, Southeast Asian Biodiversity Research Center, Chinese Academy of Sciences   | CAS                                 | 2018/06/01-2019/05/31 | 100              | 0                       | 0                         | Ruichang Quan    |
| 13  | Practical Application of Macroscopic Evolution Theory: Carrying out the Protection of Plant Diversity in Yunnan with Natural Plant Resources as the Core | Yunling Talents Program             | 2018/1-2022/12        | 700              | 700                     | 0                         | Harald Schneider |
| 14  | Comprehensive conservation biology research under the guidance of macroevolution theory  | National "Thousand Talents Program" | 2018/3-2021/3         | 500              | 500                     | 0                         | Harald Schneider |
| 15  | Evolution of fern diversity in karst areas of Southeast Asia   | XTBG Postdoctor Project             | 2018/03-2020/03       | 15               | 15                      | 15                        | Lucie Bauret     |
| 16  | The role of polyploidy in the diversity of ferns   | XTBG Postdoctor Project             | 2018/06-2020/06       | 15               | 15                      | 15                        | Tao Fujiwara     |
| 17  | Comparison of fern and   | XTBG                                | 2018/08-201           | 15               | 15                      | 15                        | Phyo Kay         |

| NO. | Project name   | Type  | Duration               | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal     |
|-----|--|---|------------------------|------------------|-------------------------|---------------------------|---------------|
|     | Lycophytes biodiversity in Shan-Thai and Indo-China, especially Myanmar, from a phylogenetic perspective   | Postdoctoral Project                                  | 8/08                   |                  |                         |                           | Kine          |
| 18  | Introduction project of "Post-doctoral International Exchange Program" in 2018   | National post-doctoral International Exchange Program | 2018/03/22 -2020/03/21 | 60               | 0                       | 0                         | Lucie Bauret  |
| 19  | Post-doctoral orientation training in Yunnan Province in 2018  |   |                        | 16               | 16                      | 0                         | Lucie Bauret  |
| 20  | Post-doctoral orientation training in Yunnan Province in 2018  |   |                        | 16               | 16                      | 0                         | Tao Fujiwara  |
| 21  | Post-doctoral orientation training in Yunnan Province in 2018  |   |                        | 16               | 16                      | 0                         | Phyo Kay Kine |
| 22  | 2018 Annual Operational Grants Project of the Special Biological Specimen Museum (Museum) of the Strategic Bio-resources Support System of the Chinese Academy of Sciences | Ministry of Finance                                   |                        | 20               | 20                      | 20                        | Jianwu Li     |
| 23  | 2017 Youth Talent Cultivation Program of the Southeast Asian Biodiversity Research CAS   | CAS   | 2018/01/01-2019/12/31  | 20               | 10                      | 10                        | Yu Song       |
| 24  | Analyze the evolution of the organelle   | General Project                                       | 2019/01/01-2022/12/31  | 59               | 29.5                    | 29.5                      | Wenbin Yu     |

| NO. | Project name  | Type  | Duration              | Contract funding | Total allocated funding | Allocated funding in 2018 | Principal |
|-----|---|---|-----------------------|------------------|-------------------------|---------------------------|-----------|
|     | genome of parasitic plants: taking Orobanchaceae as an example                                    |   |                       |                  |                         |                           |           |
| 25  | Research on Key Digital Technology of Genetic Information of Dai medicine Plants in Xishuangbanna | CAS Major Science and Technology Infrastructure Open Research Project -Sub-project  | 2019/11/01-2020/12/31 | 37               | 15                      | 15                        | Wenbin Yu |
| 26  | Genome evolution of organelles in parasitic plant   | CAS Major Science and Technology Infrastructure Open Research Project - Sub-project | 2019/11/01-2020/12/31 | 39               | 15                      | 15                        | Wenbin Yu |



*Hemiphyllodactylus sp.*



*Toxeus magnus*

## 4. Publications

In 2018, 82 papers were published with authors from the CIC. Of these, 31 SCI papers have a CIC first author and 47 SCI papers have a non-CIC first author, while 4 papers with CIC first author were published in Chinese journals. The cumulative impact factor of papers with CIC first authors was 142.13: 67.7% of these papers were Q1 and 19.4% were TOP 10. In addition, 2 book chapters and 1 book were published.

| No. | Publication information  | IF     | Q1-Q4 |
|-----|--|--------|-------|
|     | <b>SCI publications with the first author from the CIC</b>   |        |       |
| 1   | <b>Chen, Z.Q.</b> , Corlett, R.T., Jiao, X.G., Liu, S.J., Charles-Dominique, T., Zhang, S.C., Li, H., Lai, R., Long, C.B., <b>Qaun, R.C.*</b> (2018) Prolonged milk provisioning in a jumping spider. <i>Science</i> 362: 1052-1055.   | 41.058 | TOP5  |
| 2   | <b>Bai, Y.</b> , Wong, C.P.*, Jiang, B.*, <b>Hughes, A.C.</b> , Wang, M., Wang, Q. (2018) Developing China's Ecological Redline Policy using ecosystem services assessments for land use planning. <i>Nature Communications</i> 9: 3034.   | 12.353 | TOP5  |
| 3   | <b>Domonique, T.C.*</b> , Midgley, G.F., <b>Tomlinson, K.W.</b> , Bond, W.J. (2018) Steal the light: shade vs fire adapted vegetation in forest-savanna mosaics. <i>New Phytologist</i> 218: 1419-1429.  | 7.433  | TOP5  |
| 4   | <b>Williams, S.J.</b> , Gale, S.W., Hinsley, A.*, Gao, J.Y., John, F.A.V.S. (2018) Using consumer preferences to characterize the trade of wild-collected ornamental orchids in China. <i>Conservation Letters</i> e12569.   | 7.279  | TOP5  |
| 5   | <b>Cao, L.*</b> , <b>Wang, B.</b> , Yan, C., Wang, Z.Y., Zhang, H.M., Geng, Y.Z., Chen, J., Zhang, Z.B. (2018) Risk of cache pilferage determines hoarding behavior of rodents and seed fate. <i>Behavioral Ecology</i> 29(4): 984-991.  | 3.347  | TOP5  |
| 6   | <b>Hughes, A.C.*</b> (2018) Have Indo-Malaysian forests reached the end of the road? <i>Biological Conservation</i> 223:129-137.   | 4.661  | TOP10 |
| 7   | <b>Tomlinson, K.W.*</b> , Sterck, F.J., Barbosa, E.R.M., de Bie, S., Prins, H.H.T., van Langevelde, F. (2018) Seedling growth of savanna tree species from three continents under grass competition and nutrient limitation in a greenhouse experiment. <i>Journal of Ecology</i> DOI: 10.1111/1365-2745.13085               | 5.172  | Q1    |
| 8   | <b>Lan, Q.Y.</b> , Yin, S.H., He, H.Y., <b>Tan, T.H.</b> , Liu, Q., Xia, Y.M., <b>Wen, B.</b> , Baskin, C.C.*, Baskin, J.M. (2018) Seed dormancy-life form profile for 358 species from the Xishuangbanna seasonal tropical rainforest, Yunnan Province, China compared to world database. <i>Scientific Reports</i> 8:4674. | 4.122  | Q1    |
| 9   | Zhao, M.L., <b>Song, Y.*</b> , Ni, J., <b>Tan, Y.H.</b> , Xu, Z.F.* (2018) Comparative chloroplast genomics and phylogenetics of nine <i>Lindera</i> species (Lauraceae). <i>Scientific Reports</i> 8: 8844.   | 4.122  | Q1    |
| 10  | <b>Beng, K.C.*</b> , <b>Corlett, R.T.</b> , <b>Tomlinson, K.W.</b> (2018) Seasonal changes in the diversity and composition of the litter fauna in native forests and rubber plantations. <i>Scientific Reports</i> 8:10232.   | 4.122  | Q1    |
| 11  | <b>Pasion, B.O.</b> , <b>Roeder, M.</b> , Liu, J.J., Yasuda, M., <b>Corlett, R.T.</b> , Slik, J.W.F., <b>Tomlinson, K.W.*</b> (2018) Trees represent community composition of other plant lifeforms, but not their diversity, abundance or responses to fragmentation. <i>Scientific Reports</i> 8:11374.                    | 4.122  | Q1    |
| 12  | <b>Tanalgo, K.C.*</b> , Tabora, J.A.G., <b>Hughes, A.C.*</b> (2018) Bat cave vulnerability index (BCVI): A holistic rapid assessment tool to identify priorities for effective cave conservation in the tropics. <i>Ecological Indicators</i> 89: 852-860.   | 3.983  | Q1    |
| 13  | <b>Wang, B.*</b> , Phillips, J.S., <b>Tomlinson, K.W.</b> (2018) Tradeoff between physical and chemical defense in plant seeds is mediated by seed mass. <i>OIKOS</i> 127: 440-447.  | 3.709  | Q1    |
| 14  | <b>Yu, W.B.*</b> , Randle, C.P., Lu, L., Wang, H., Yang, J.B., dePanmphilis, C.W., <b>Corlett,</b>   | 3.677  | Q1    |

| No. | Publication information   | IF    | Q1-Q4 |
|-----|---|-------|-------|
|     | <b>R.T., Li, D.Z.*</b> (2018) The Hemiparasitic Plant <i>Phtheirospermum</i> (Orobanchaceae) Is Polyphyletic and Contains Cryptic Species in the Hengduan Mountains of Southwest China. <i>Frontiers in Plant Science</i> doi: 10.3389/fpls.2018.00142.   |       |       |
| 15  | <b>Wang, S.L., Li, L., Ci, X.Q.,</b> Conran, G.J., <b>Li, J.*</b> (2018) Taxonomic status and disjunction of <i>Mirabilis himalaica</i> (Nyctaginaceae). <i>Journal of Systematics and Evolution</i> (Accept on 17Oct2018) <a href="https://doi.org/10.1111/jse.12466">https://doi.org/10.1111/jse.12466</a>  | 3.657 | Q1    |
| 16  | <b>Ding, X., Xiao, J.H., Li, L.,</b> Conran, G.J., <b>Li, J.*</b> (2018) Consistent and robust delimitation of two controversial gold-thread nanmu tree species based on morphological and RADseq data. <i>Journal of Systematics and Evolution</i> (Accepted on 01May2018) <a href="https://doi.org/10.1111/jse.12433">https://doi.org/10.1111/jse.12433</a> | 3.657 | Q1    |
| 17  | <b>Meng, H.H.<sup>†</sup>, Zhou, S.S.<sup>†</sup>, Li, L., Tan, Y.H., Li, J.W., Li, J.*</b> (2018) Conflict between biodiversity conservation and economic growth: Insight into rare plants in tropical China. <i>Biodiversity and Conservation</i> (Accepted on 09Nov2018)   | 2.828 | Q1    |
| 18  | <b>Yuan, X., Wen, B.*</b> (2018) Seed germination response to high temperature and water stress in three invasive Asteraceae weeds from Xishuangbanna, SW China. <i>PLoS ONE</i> 13(1): e0191710.   | 2.766 | Q1    |
| 19  | <b>Yu, W.B.*,</b> Wang, H., Liu, M.L., Grabovskaya-Borodina, A.E., Li, D.Z.* (2018) Phylogenetic approaches resolve taxonomical confusion in <i>Pedicularis</i> (Orobanchaceae): Reinstatement of <i>Pedicularis delavayi</i> and discovering a new species <i>Pedicularis milliana</i> . <i>PLoS One</i> 13(7): e0200372.                                    | 2.766 | Q1    |
| 20  | <b>Shen, T., Corlett, R.T.*,</b> Song, L.*, Ma, W.Z., Guo, X.L., <b>Song, Y.,</b> Wu, Y. (2018) Vertical gradient in bryophyte diversity and species composition in tropical and subtropical forests in Yunnan, SW China. <i>Journal of Vegetation Science</i> 29: 1075-1087.   | 2.658 | Q1    |
| 21  | <b>Cao, L., Yan, C., Wang, Bo.*</b> (2018). Differential seed mass selection on hoarding decisions among three sympatric rodents. <i>Behavioral Ecology and Sociobiology</i> 72:161   | 2.473 | Q1    |
| 22  | <b>Chang, Y.F.*,</b> Ebihara, A., Lu, S.G., Liu, H.M., <b>Schneider, H.</b> (2018) Integrated taxonomy of the <i>Asplenium normale</i> complex (Aspleniaceae) in China and adjacent areas. <i>Journal of Plant Research</i> 131: 573-587.   | 2.000 | Q2    |
| 23  | <b>Tanalgo, K.C.*,</b> <b>Hughes, A.C.*</b> (2018) Bats of the Philippine Islands—A review of research directions and relevance to national-level priorities and targets. <i>Mammalian Biology</i> 91:46-56.  | 1.443 | Q2    |
| 24  | <b>Huang, H.,</b> Zi, X.M., Lin, H., <b>Gao, J.Y.*</b> (2018) Host-specificity of symbiotic mycorrhizal fungi for enhancing seed germination, protocorm formation and seedling development of over-collected medicinal orchid, <i>Dendrobium devonianum</i> . <i>Journal of Microbiology</i> 56(1): 42-48.  | 2.319 | Q3    |
| 25  | <b>Song, Y.,</b> Gan, Y., Liu, L.Y., <b>Corlett, R.T.*</b> (2018) The floral transcriptome of <i>Machilus yunnanensis</i> , a tree in the magnoliid family Lauraceae. <i>Computational Biology and Chemistry</i> <a href="https://doi.org/10.1016/j.compbiolchem.2018.05.010">https://doi.org/10.1016/j.compbiolchem.2018.05.010</a> .                        | 1.412 | Q3    |
| 26  | <b>Li, J.W.*,</b> <b>Tan, Y.H.*,</b> Wang, X.L.*, Wang, C.W., Jin, X.H. (2018) <i>Begonia medogensis</i> , a new species of Begoniaceae from Western China and Northern   | 1.393 | Q3    |



| No. | Publication information  | IF    | Q1-Q4 |
|-----|--|-------|-------|
|     | Myanmar. <i>PhytoKeys</i> 103: 13-18.  |       |       |
| 27  | <b>Li, J.W.</b> , Huang, L.Q., Li, G.W., <b>Pan, B.</b> , <b>Yin, J.T.</b> , Jin, X.H.* (2018) Lectotype, epitype and amendment of <i>Gastrodia angusta</i> (Orchidaceae). <i>Phytotaxa</i> 356(4): 291-296.   | 1.185 | Q3    |
| 28  | <b>Yang, B.</b> , Ding, H.B., Li, Z.H., <b>Tan, Y.H.</b> * (2018) <i>Primula zhui</i> (Primulaceae) sp. nov. from south Yunnan, southwest China. <i>Nordic Journal of Botany</i> 35: 681-686.  | 0.846 | Q3    |
| 29  | <b>Xue, P.</b> , <b>Wen, B.</b> * (2018) Desiccation tolerance of intermediate pomelo ( <i>Citrus maxima</i> ‘Mansailong’) seeds following rapid and slow drying. <i>Seed Science and Technology</i> 46:511-519  | 0.593 | Q3    |
| 30  | <b>Tang, F.X.</b> , <b>Song, Y.</b> , Liu, Q.* (2018) The chloroplast genome of an endangered orchid species, <i>Gastrochilus calceolaris</i> (Orchidaceae: Aeridinae). <i>Mitochondrial DNA Part B</i> 2(3): 990-991.   | 0.488 | Q4    |
| 31  | <b>Gao, J.M.</b> , <b>Song, Y.</b> *, Zheng, B. (2018) Complete chloroplast genome sequence of an endangered tree species, <i>Magnolia sieboldii</i> (Magnoliaceae). <i>Mitochondrial DNA Part B</i> 3(2): 1261-126.   | 0.488 | Q4    |
|     | <b>Chinese Publications with first author from CIC</b>   |       |       |
| 1   | <b>Hou, Q.X.</b> , <b>Ci, X.Q.</b> , <b>Liu, Z.F.</b> , <b>Xu, W.M.</b> , <b>Li, J.</b> * (2018) Assessment of the evolutionary history of Lauraceae in Xishuangbanna National Nature Reserve using DNA barcoding. <i>Biodiversity Science</i> 26(3): 217-228. [侯勤曦, 慈秀芹, 刘志芳, 徐武美, 李捷* (2018) 基于 DNA 条形码评估西双版纳国家级自然保护区对樟科植物进化历史的保护. <i>生物多样性</i> 26(3): 217-228.]                         |       |       |
| 2   | <b>Shen, T.</b> , Song, L.*, Guo, X.L., <b>Corlett, R.T.</b> , Wu, Y., Ma, Z.X., Chen, Q. (2018) Habitat preference of epiphytic bryophytes along the vertical gradient and their indicator functions in the tropical dipterocarp rain forest. <i>Guihaia</i> online. [沈婷, 宋亮*, 郭新磊, <b>Corlett Richard Thomas</b> , 吴毅, 马占霞, 陈泉 (2018) 龙脑香热带雨林附生苔藓沿宿主垂直梯度的微生境偏好及其指示作用. <i>广西植物</i> 在线发表.] |       |       |
| 3   | <b>Corlett R.T.</b> * (2018) Biodiversity and ecosystem services: Towards ecological security in tropical and subtropical East Asia. <i>Biodiversity Science</i> 25(2): 175-181. [Corlett R.T.* (2018) 生物多样性和生态系统服务: 实现东亚热带和亚热带的生态安全. <i>生物多样性</i> 26(7): 766-774.]  |       |       |
| 4   | <b>Zhang, M.Q.</b> , <b>Pan, B.</b> , <b>Tomlinson, K.W.</b> * (2018) Herb-layer Fabaceae diversity of Savanna physiognomies and its response to environmental factors in Yunnan, China. <i>Journal of Green Science and Technology</i> 1-5. [张梦琪, 潘勃, <b>Tomlinson Kyle Warwick</b> * (2018) 云南稀树草原草被层豆科物种多样性及其对环境因子的响应. <i>绿色科技</i> 1-5.]  |       |       |
|     | <b>Other SCI publications with co-authors from the CIC</b>   |       |       |
| 1   | Barba-Montoya, J., Reis, M.D., <b>Schneider, H.</b> , Donoghue, P.C.J.*, Yang, Z.H.* (2018) Constraining uncertainty in the timescale of angiosperm evolution and the veracity of a cretaceous terrestrial revolution. <i>New Phytologist</i> 218(2): 819-834.   | 7.330 | TOP5  |
| 2   | Sousa, F.D, Foster, P.G., Donoghue, P.C.J., <b>Schneider, H.</b> , Cox, C.J.* (2018) Nuclear protein phylogenies support the monopoly of the three bryophyte groups (Bryophyta   | 7.330 | TOP5  |

| No. | Publication information   | IF    | Q1-Q4 |
|-----|---|-------|-------|
|     | Schimp.). <i>New Phytologist</i> doi: 10.1111/nph.15587   |       |       |
| 3   | Osborne, C.P.*, <b>Charles-Dominique, T.</b> , Stevens, N., Bond, W.J., Midgley, G.F., Lehmann, C.E.R.* (2018) Human impacts in African savannas are mediated by plant functional traits <i>New Phytologist</i> 220: 10-24.   | 7.330 | TOP5  |
| 4   | Li, W.F.*, Zhou, W.Q., <b>Bai, Y.</b> , S.T.A., Han, L.J. (2018) The smart growth of Chinese cities: Opportunities offered by vacant land. <i>Land Degradation &amp; Development</i> 29: 3512-3520.   | 7.270 | TOP5  |
| 5   | Ferlian, O., Eisenhauer, N., Aguirrebengoa, M., Camara, M., Ramirez-Rojas, I., Santos, F., <b>Tanalgo, K.</b> , ... & Thakur, M. P.* (2018). Invasive earthworms erode soil biodiversity: A meta-analysis. <i>Journal of Animal Ecology</i> 87(1): 162-172.   | 4.459 | TOP5  |
| 6   | Wang, Z.Y., <b>Wang, B.</b> , Yi, X.F., Yan, C., <b>Cao, L.*</b> , Zhang, Z.B. (2018) Scatter-hoarding rodents are better pilferers than larder-hoarders. <i>Animal Behaviour</i> 141: 151-159.   | 3.067 | TOP5  |
| 7   | Tang, X.L., Zhao, X., Bai, Y.F., Tang, Z.Y., Wang, W.T., Zhao, Y.C., Wan, H.W., Xie, Z.Q., Shi, X.Z., Wu, B.F, Wang, G.X., Yan, J.H., Ma, K.P., Du, S., Li, S.G., Han, S.J., <b>Ma, Y.X.</b> , Hu, H.F., He, N.P., Yang, Y.H., Han, W.X., He, H.L., Yu, G.R., Fang, J.Y., Zhou, G.Y.* (2018) Carbon pools in China's terrestrial ecosystems: new estimates based on an intensive field survey. <i>Proceedings of National Academy of Sciences of the United States of America</i> 115: 4021–4026. | 9.504 | TOP10 |
| 8   | Bjorkman, A.D., Myers-Smith, I.H., Elmendorf, S.C., ..., <b>Bai, Y.</b> , et al. (2018) Tundra Trait Team: A database of plant traits spanning the tundra biome. <i>Global Ecology Biogeography</i> 2018: 1–10  | 5.958 | TOP10 |
| 9   | Chen, C.*, <b>Quan, R.C.</b> , Cao, G., Yang, H., Burton, A.C. (2018) Effects of law enforcement and community outreach on mammal diversity in a biodiversity hotspot. <i>Conservation Biology</i> ( In press)  | 5.890 | TOP10 |
| 10  | Primack, R.B.*, Miller-Rushing, A. J., <b>Corlett, R.T.</b> , Devictor, V., Johns, D.M., Loyola, R., Pejchar, L. (2018) Biodiversity gains? The debate on changes in local-vs global-scale species richness. <i>Biological Conservation</i> <a href="https://doi.org/10.1016/j.biocon.2017.12.023">https://doi.org/10.1016/j.biocon.2017.12.023</a> .   | 4.661 | TOP10 |
| 11  | Morris, J.L., Puttick, M.N., Clark, J.W., Edwards, D., Kenrick, P., Pressel, S., Wellman, C.H., Yang, Z.H., <b>Schneider, H.</b> , Donoghue, P.C.J.* (2018) The timescale of early land plant evolution. <i>Proceedings of the National Academy of Science USA</i> 115(10): E2274-E2282.  | 9.661 | Q1    |
| 12  | Morris, J.L., Puttick, M.N., Clark, J.W., Edwards, D., Kenrick, P., Pressel, S., Wellman, C.H., Yang, Z.H., <b>Schneider, H.*</b> , Donoghue, P.C.J. (2018) Reply to Hedges et al. Accurate time trees do indeed require accurate calibrations. <i>Proceedings of the National Academy of Science USA</i> 115(41): E9512-E9513.   | 9.661 | Q1    |
| 13  | Puttick, M.N., Morris, J.L., Williams, T.A., Cox, C.J., Edwards, D., Kenrick, P., Pressel, S., Wellman, C.H., <b>Schneider, H.*</b> , Pisani, D.*, Donoghue, P.C.J.* (2018) The interrelationships of land plants and the nature of the ancestral embryophyte. <i>Current Biology</i> 28(5): 733-745.   | 9.251 | Q1    |
| 14  | Hu, C.C., Lei, Y.B., <b>Tan, Y.H.</b> , Sun, X.C., Xu, H., Liu, C.Q., Liu, X.Y. (2018) Plant  | 5.172 | Q1    |

| No. | Publication information  | IF    | Q1-Q4 |
|-----|--|-------|-------|
|     | nitrogen and phosphorus utilization under invasive pressure in a montane ecosystem of tropical China. <i>Journal of Ecology</i> . 1–15   |       |       |
| 15  | Dossa, G.G.*, Schaefer, D., Zhang, J.L., Tao, J.P., Cao, K.F., <b>Corlett, R.T.</b> , ... Harrison, R.D. (2018) The cover uncovered: Bark control over wood decomposition. <i>Journal of Ecology</i> <a href="https://doi.org/10.1111/1365-2745.12976">https://doi.org/10.1111/1365-2745.12976</a> .   | 5.172 | Q1    |
| 16  | <b>Bauret, L.*</b> , Field, A.R.*, Gaudeul, M., Selosse, M.-A., Rouhan, G. (2018) First insights on the biogeographical history of <i>Phlegmariurus</i> (Lycopodiaceae), with a focus on Madagascar. <i>Molecular Phylogenetics and Evolution</i> 127: 488-501.  | 4.412 | Q1    |
| 17  | Regalado, L.*, Loriga, J., Bechteler, J., Beck, A., <b>Schneider, H.</b> , Heinrichs, J. (2018) Phylogenetic biogeography reveals the thing and source areas of the <i>Adiantum</i> species (Pteridaceae) in the West Indies, with a special focus on Cuba. <i>Journal of Biogeography</i> 45(3): 541-551.   | 4.15  | Q1    |
| 18  | Chen, H.H., Zhang, Y., Peng, Y.Q.*, <b>Corlett, R.T.*</b> (2018) Latitudinal effects on phenology near the northern limit of figs in China. <i>Scientific reports</i> DOI: 10.1038/s41598-018-22548-7.   | 4.122 | Q1    |
| 19  | Gan, Y. <sup>†</sup> , <b>Song, Y.<sup>†</sup></b> , Chen, Y.D., Liu, H.B., Yang, D.D., Xu, Q.Y., Zheng, Z.F.* Transcriptome analysis reveals a composite molecular map linked to unique seed oil profile of <i>Neocinnamomum caudatum</i> (Nees) Merr <i>BMC Plant Biology</i> <a href="https://doi.org/10.1186/s12870-018-1525-9">https://doi.org/10.1186/s12870-018-1525-9</a> .  | 3.93  | Q1    |
| 20  | <b>Xi, N.X.</b> , Chu, C.J.*, Bloor, J.M.G. (2018) Plant drought resistance is mediated by soil microbial community structure and soil-plant feedbacks in a savanna tree species. <i>Environmental and Experimental Botany</i> DOI: 10.1016/j.envexpbot.2018.08.013  | 3.666 | Q1    |
| 21  | Stewart, A.B.*, <b>Sritongchuay, T.</b> , Teartisup, P., Kaewsomboon, S., and Bumrungsri, S. (2018) Habitat and landscape factors influence pollinators in a tropical megacity, Bangkok, Thailand. <i>PeerJ</i> 6: e5335.  | 2.118 | Q2    |
| 22  | Chen, J.Y., Cui, T., Wang, H.M.*, Liu, G., Gilfedder, M., <b>Bai, Y.</b> (2018) Spatio-temporal evolution of water-related ecosystem services: Taihu Basin, China. <i>PeerJ</i> 6: e5041.  | 2.118 | Q2    |
| 23  | Asefa, M., Brown, C., Cao, M., Zhang, G.C., <b>Ci, X.Q.</b> , Sha, L.Q., <b>Li, J.</b> , Lin, L.X., Yang, J.* (2018) Contrasting effects of space and environment on pairwise and nearest-neighbor metrics of functional and phylogenetic dissimilarity. <i>Journal of Plant Ecology</i> rty026, <a href="https://doi.org/10.1093/jpe/rty026">https://doi.org/10.1093/jpe/rty026</a> | 1.973 | Q2    |
| 24  | Hai, D.V., Min, D.Z., Khang, N.S., <b>Tan, Y.H.</b> , Thoa, P.T.K., Bramley, G.L.C., de Kok, R.P.J., Li, B.* (2018) <i>Premna vietnamensis</i> (Lamiaceae, Premnoideae), a distinct new species from the Central Highlands of Vietnam. <i>PLoS ONE</i> 13(5): e195811.   | 2.766 | Q3    |
| 25  | Sreekar, R., Katabuchi, M., Nakamura, A., <b>Corlett, R.T.</b> , Slik, J.F., Fletcher, C., ... Sun, I.F. (2018) Spatial scale changes the relationship between beta diversity, species richness and latitude. <i>Royal Society Open Science</i> DOI: 10.1098/rsos.181168.  | 2.504 | Q2    |
| 26  | Ascens ão, F.*, <b>Corlett, R.T.</b> (2018) Environmental challenges for the Belt and Road Initiative. <i>Sustainability</i> <a href="https://doi.org/10.1038/s41893-018-0059-3">https://doi.org/10.1038/s41893-018-0059-3</a> .   | 2.075 | Q2    |
| 27  | <b>Fujiwara, T.*</b> , Serizawa, S., Watano, Y. (2018) Phylogenetic analysis revealed the origins of tetraploid and hexaploid species in the <i>Lepisorus thunbergianus</i>  | 2.0   | Q2    |

| No. | Publication information   | IF    | Q1-Q4 |
|-----|---|-------|-------|
|     | (Polypodiaceae) complex. <i>Journal of Plant Research</i> 331(6): 945-959.  |       |       |
| 28  | He, L.J., <b>Schneider, H.</b> , Hovenkamp, P., Marquardt, J., Wei, R., Wei, X.P., Zhang, X.C., Xiang, Q.P.* (2018) A molecular phylogeny of selligieoid ferns (Polypodiaceae): implications for a natural delimitation despite homoplasy and rapid radiation. <i>Taxon</i> 67(2): 237-249.   | 2.68  | Q3    |
| 29  | Galindon, J.M.M., <b>Pasion, B.O.</b> , Tongco, M.D.C., Fidelino, J.S., Duya, M.R.M., Ong, P.S.* (2018) Plant diversity patterns in remnant forests and exotic tree species-based reforestation in active limestones quarries in the Luzon and Mindanao biogeographic sub-regions in the Philippines. <i>Ecological Research</i> 33: 63-72. | 1.531 | Q3    |
| 30  | <b>Armani, M.</b> , van Langevelde, F., <b>Tomlinson, K.W.</b> , Adu-Bredu, S., Djagbletey, G.D., Veenendaal, E.M. (2018) Compositional patterns of overstorey and understorey woody communities in a forest-savanna boundary in Ghana. <i>Plant Ecology &amp; Diversity</i> . DOI: 10.1080/17550874.2018.1539133                           | 1.205 | Q3    |
| 31  | Zhang, R., Yi, T.S., <b>Pan, B.</b> * (2018) <i>Pseudarthria panii</i> (Fabaceae: Desmodieae), a new species from Asia, 120 years after its first collection. <i>Phytotaxa</i> 367(3): 265-274.   | 1.185 | Q3    |
| 32  | Zhang, F., Feng, S., Zhou, J.J., Zhang, R., Liu, L.H., Yang, C.Z., Yu, X.L.* <b>Pan, B.</b> * (2018) <i>Apios chendehzhaiana</i> (Fabaceae), an overlooked species and a new combination from China: evidence from morphological and molecular analyses. <i>Phytotaxa</i> 371(1): 1-16.   | 1.185 | Q3    |
| 33  | Chang, Y.F., Hori, K., Murakami, N., Cao, L.M., Lu, S.G., <b>Schneider, H.</b> (2018) Validation of <i>Hymenasplenium laterrepens</i> (Aspleniaceae): evidence from morphology and molecular analyses. <i>Phytotaxa</i> 374 (4): 277-290.   | 1.18  | Q3    |
| 34  | Khamcha, D., <b>Corlett, R.T.</b> , Powell, L.A., Savini, T., Lynam, A.J., Gale, G.A. (2018) Road induced edge effects on a forest bird community in tropical Asia. <i>Avian Research</i> 9(1): 20.   | 1.063 | Q3    |
| 35  | Ya, J.D., Yu, Z.X., Yang, Y.Q., Zhang, S.D., Zhang, Z.R., Cai, J., ... <b>Yu, W.B.</b> * (2018) Complete chloroplast genome of <i>Firmiana major</i> (Malvaceae), a critically endangered species endemic to southwest China. <i>Conservation Genetics Resources</i> 10(4): 713-715.  | 0.742 | Q3    |
| 36  | Xue, B.* <b>Tan, Y.H.</b> *, Thomas, D.C., Chaowasku, T., Hou, X.L., Saunders, R.M.K. (2018) A new Annonaceae genus, <i>Wuodendron</i> , provides support for a post-boreotropical origin of the Asian-Neotropical disjunction in the tribe Miliuseae. <i>Taxon</i> 67(2): 250-266.   | 2.680 | Q4    |
| 37  | Liu, H.M, Russell, S.R., Vogel, J., <b>Schneider, H.</b> * (2018) Inferring the potential of plastid DNA-based identification of derived ferns: a case study on the <i>Asplenium trichomanes</i> aggregate in Europe. <i>Plant Systematics and Evolution</i> 304(8): 1009-1022.   | 1.45  | Q4    |
| 38  | <b>Yang, B.</b> , <b>Zhou, S.S.</b> , Ding, H.B., <b>Li, R.</b> , Maung, K.W., <b>Tan, Y.H.</b> * (2018) Two new species of <i>Trivalvaria</i> (Annonaceae) from northern Myanmar. <i>PhytoKeys</i> 94: 3-12.   | 1.393 | Q4    |
| 39  | <b>Yang, B.</b> , Ding, H.B., <b>Zhou, S.S.</b> , Zhu, X.X., <b>Li, R.</b> , Maw, M.B., <b>Tan, Y.H.</b> * (2018) <i>Aristolochia sinoburmanica</i> (Aristolochiaceae), a new species from north Myanmar. <i>PhytoKeys</i> 94: 13-22.   | 1.393 | Q4    |

| No. | Publication information  | IF    | Q1-Q4 |
|-----|--|-------|-------|
| 40  | Ding, H.B., <b>Yang, B.</b> , <b>Zhou, S.S.</b> , <b>Li, R.</b> , Maw, M.B., Maung, K.W., <b>Tan, Y.H.*</b> (2018) <i>Hedychium putaoense</i> (Zingiberaceae), a new species from Putao, Kachin State, Northern Myanmar. <i>PhytoKeys</i> 94:51-57.                                    | 1.393 | Q4    |
| 41  | <b>Tan, Y.H.</b> , Li, D.R., <b>Zhou, S.S.</b> , Chen, Y.J., Bramley, G.L.C., Li, B.* (2018) <i>Premna grandipaniculata</i> (Lamiaceae, Premnoideae), a remarkable new species from north Myanmar. <i>PhytoKeys</i> 94: 117-123.   | 1.393 | Q4    |
| 42  | Liu, Q., <b>Zhou, S.S.</b> , Jin, X.H., <b>Pan, B.</b> , Maung, K.W., Zyaw, M., <b>Li, R.</b> , <b>Quan, R.C.</b> , <b>Tan, Y.H.*</b> (2018) <i>Dendrobium naungmungense</i> (Orchidaceae, Dendrobieae), a new species from Kachin State, Myanmar. <i>PhytoKeys</i> 94: 31–38.         | 1.393 | Q4    |
| 43  | <b>Yang, B.</b> , Ding, H.B., <b>Li, J.W.</b> , <b>Tan, Y.H.*</b> (2018) Two new species of <i>Hiptage</i> (Malpighiaceae) from Yunnan, Southwest of China. <i>PhytoKeys</i> 110:81-89.  | 1.393 | Q4    |
| 44  | <b>Zhou, S.S.</b> , <b>Tan, Y.H.</b> , Jin, X.H., Maung, K.W., Zyaw, M., <b>Li, R.</b> , <b>Quan, R.C.</b> , Liu, Q.* (2018) <i>Coelogyne victoria-reginae</i> (Orchidaceae, Epidendroideae, Arethuseae), a new species from Chin State, Myanmar. <i>PhytoKeys</i> 98: 125–133.        | 1.393 | Q4    |
| 45  | <b>Zhou, S.S.</b> , <b>Tan, Y.H.</b> , <b>Li, R.</b> , <b>Quan, R.C.</b> , Maung, K.W., Liu, Q.*, SiMa YK*(2018) <i>Magnolia kachinensis</i> (Magnoliaceae), a new species from northern Myanmar. <i>Phytotaxa</i> 375(1): 92-98.  | 1.185 | Q4    |
| 46  | Wu, L., <b>Tan, Y.H.</b> , Hareesh, V.S., Liu, Q.R. (2018) <i>Ophiorrhiza macrocarpa</i> (Rubiaceae), a new viviparous species from Yunnan, southwestern China. <i>Nordic Journal of Botany</i> 2018: e01673   | 0.846 | Q4    |
| 47  | Rakotondrainibe, F., Jouy, A., Rouhan, G., <b>Bauret L.</b> , Parris, B. S. (2018) Nouveaut é s taxonomiques et nomenclaturales chez les foug è res grammitides (Pteridophyta, Polypodiaceae, Grammitidoideae) de Madagascar. <i>Adansonia</i> 40(2): 141-162.                         | 0.625 | Q4    |
|     | <b>Book</b>  |       |       |
| 1   | Singh J.S. & <b>Chaturvedi R.K.</b> (2018) Tropical Dry Deciduous Forest: Research Trends and Emerging Features. Springer Nature Singapore Pte Ltd., Singapore. eBook ISBN: 978-981-10-7260-4; Hardcover ISBN: 978-981-10-7259-8.  |       |       |
|     | <b>Book Chapters</b>   |       |       |
| 1   | <b>Li Jie</b> , 2018. Lauraceae. In: Li De-zhu (ed.), <i>A dictionary of the families and genera of Chinese vascular plants</i> . Science Press, Beijing   |       |       |
| 2   | <b>Corlett, R.T.</b> 2018. Tropical rainforests and climate change. In: DellaSala, D.A. and Goldstein, M.I. (eds.), <i>Encyclopedia of the Anthropocene</i> , Volume 2, Cambridge University Press, pp. 25-29.   |       |       |
|     | <b>Other publications</b>  |       |       |
| 1   | Sy, E., Tanalgo, K.C. (2018) Predation attempt by Tokay gecko ( <i>Gekko gecko</i> ) on Olive-backed Sunbird <i>Cinnyris jugularis</i> in the Philippines. <i>Southeast Asian Vertebrate Records</i> 50-51   |       |       |
| 2   | Fan, Y.K., <b>Lan, Q.Y.</b> , Hou, L.L., Lan, Z.Q. (2018) Research progress of seed germination characteristics and seedling drought resistance of <i>Pinus yunnanensis</i> France. <i>Seed</i> 37(2): 47-51. [樊玉坤, 兰芹英, 侯林林, 蓝增全 (2018) 云南松种子萌发特性及幼苗抗旱性研究进展. <i>种子</i> 37(2): 47-51.] |       |       |

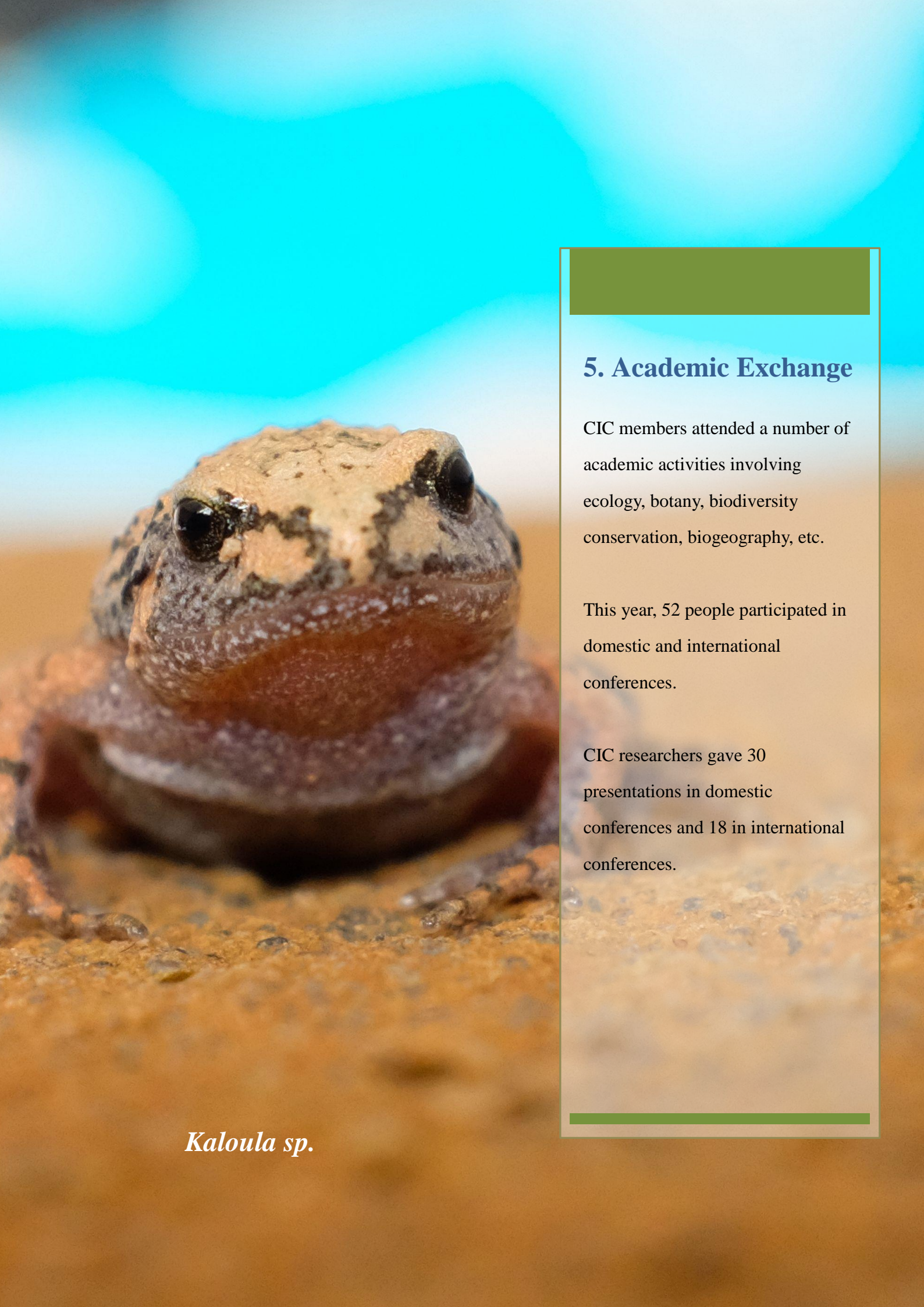
| No. | Publication information   | IF | Q1-Q4 |
|-----|---|----|-------|
| 3   | Yang, B., Tan, Y.H. (2018) <i>Agapetes bhareliana</i> . <i>China Nature</i> 4:45-47. [杨斌, 谭运洪 (2018) 弹弓打下来的弹弓树萝卜. <i>大自然</i> 4: 45-47.]   |    |       |
| 4   | Yang, B., Tan, Y.H., Jin, X.H. (2018) A brief history of plant diversity research in Myanmar. <i>Man and the Biosphere</i> 2: 43-44. [杨斌, 谭运洪, 金效华 (2018) 缅甸植物多样性研究简史. <i>人与生物圈</i> 2: 43-44.]  |    |       |
| 5   | Tan, Y.H. (2018) Plant exploration in North Myanmar. <i>Man and the Biosphere</i> 2: 36-39.[谭运洪 (2018) 缅北植物探秘. <i>人与生物圈</i> 2: 36-39.]  |    |       |
| 6   | Jin, X.H., Tan, Y.H. (2018) Plant protection in North Myanmar from Putao County. 2: 35. [金效华, 谭运洪 从葡萄县看缅北植物保护 (2018) <i>人与生物圈</i> 2: 35.]   |    |       |
| 7   | Wang, L.Y., He, X.S., Song, Y., Tan, Y.H.*(2018) Additions to the Flora of China. <i>Acta Botanica Boreali-Occidentalia Sinica</i> 28(10): 1945-1948. [王立彦, 何显升, 宋钰, 谭运洪*(2018) 中国植物区系新资料. <i>西北植物学报</i> 28(10): 1945-1948]   |    |       |
| 8   | Li, J.D., Wang, F., Li, J.W.* (2018). <i>Bulbophyllum sarcophylloides</i> , a new record of Orchidaceae from China. <i>Journal of Tropical and Subtropical Botany</i> 26(5): 538-540. [李建东, 王芳, 李剑武* (2018) 厚叶卷瓣兰, 中国兰科一新记录种. <i>热带亚热带植物学报</i> 26(5): 538-540.]   |    |       |
| 9   | Wang, X.L., Li, J.W., Wang, C.W. & Jin, X.H. (2018). New information of orchids in Tibet, China. <i>Guihaia</i> . 38 (11): 1440–1445. [王喜龙, 李剑武, 王和旺, 金效华 (2018) 中国西藏兰科植物新资料. <i>广西植物</i> 38 (3): 1140–1145.]   |    |       |
| 10  | Ma, C.C., Ye, D.P., Yang, G.P., Li, J.W.* (2018). <i>Bulbophyllum pinicola</i> (Orchidaceae), a newly recorded species in China. <i>Guihaia</i> 38(3): 408-410. [马从昌, 叶德平, 杨国平, 李剑武* (2018) 无量山石豆兰, 中国兰科植物一新记录种. <i>广西植物</i> 38(3): 408-410.]   |    |       |
| 11  | <b>Zhu, H.*</b> (2018) A sketch for classification of tropical forest vegetation in Yunnan. <i>Guihaia</i> 38(8): 984-1004. [朱华* (2018) 云南热带森林植被分类纲要. <i>广西植物</i> 38(8): 984-1004.]   |    |       |
| 12  | <b>Zhu, H.*</b> (2018) Origin and evolution of the flora of Yunnan. <i>Plant Science Journal</i> 36(1): 32-37. [朱华* (2018) 云南植物区系的起源与演化. <i>植物科学学报</i> 36(1):32-37.]  |    |       |
| 13  | <b>Zhu, H.*</b> (2018) The “Tanaka Line” and its application as a biogeographic floristic line. <i>Plant Science Journal</i> 36(5): 761-766. [朱华* (2018) “田中线”及其在生物地理上的运用问题. <i>植物科学学报</i> 36 (5): 761-766.]  |    |       |
| 14  | <b>Zhang, Q., Ma, Y.X.*, Liu, W.J., Ma, B., Mao, Y., Yang, J.B.</b> (2018) Spatial distribution characteristics of carbon density and its relationship with environmental factors in <i>Pinus yunnanensis</i> in Yunnan Province. <i>Journal of Yunnan University</i> 40:389-397. [张强, 马友鑫, 刘文俊, 马斌, 毛洋, 杨建波 (2018) 云南省云南松林碳密度空间分布特征及其与环境因子的关系. <i>云南大学学报 (自然科学版)</i> 40:389-397] |    |       |
| 15  | Faridah-Hanum, I., Rawat, G.S., Yahara, T., Abi-Said, M., <b>Corlett, R.T.</b> , and 22 other authors. 2018. Chapter 3: Status, trends and future dynamics of biodiversity and ecosystems underpinning nature's contributions to people. In: Karki, M., Senaratna Sellamuttu, S., Okayasu, S., Suzuki, W. (eds.), <i>The IPBES regional assessment report</i>                     |    |       |

| No. | Publication information  | IF | Q1-Q4 |
|-----|--|----|-------|
|     | <i>on biodiversity and ecosystem services for Asia and the Pacific</i> . Karki, M., Senaratna Sellamuttu, S., Okayasu, S., Suzuki, W. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem services, Bonn, Germany.                      |    |       |
| 16  | <b>Chaturvedi, R.K.</b> , Pandey, S.K., Bhadouria, R., Singh, S., Raghubanshi, A.S. (2018) Woody Species in Tropical Dry Forest Exhibit Plasticity in Physiological Traits in Response to Variations in Soil Properties. <i>MOJ Ecology &amp; Environmental Science</i> 3(6): 364-367. |    |       |
| 17  | <b>Chaturvedi, R.K.</b> & Raghubanshi, A.S. (2018) Soil Water Availability Influences Major Ecosystem Processes in Tropical Dry Forest. <i>International Journal of Hydrology</i> 2(1): 00042. DOI: 10.15406/ijh.2018.02.00042.  |    |       |
| 18  | <b>Chaturvedi, R.K.</b> & Raghubanshi, A.S. (2018) Effect of Soil Moisture on Composition and Diversity of Trees in Tropical dry Forest. <i>MOJ Ecology &amp; Environmental Science</i> 3(1): 00059. DOI: 10.15406/mojes.2018.03.00059.104   |    |       |
| 19  | <b>Chaturvedi, R.K.</b> & Raghubanshi, A.S. (2018) Soil Moisture Controls Leaf Life-Span and Important Physiological Attributes of Trees in Tropical Deciduous Forest. <i>Current Trends in Forest Research: CTFR-110</i> . DOI: 10.29011/CTFR-110. 100010.                            |    |       |
| 20  | <b>Chaturvedi, R.K.</b> & Raghubanshi, A.S. (2018) Application of ordination methods for determining influence of soil properties on woody species assemblage in tropical deciduous forest. <i>International Journal of Hydrology</i> 2(3): 296-298.                                   |    |       |
| 21  | <b>Chaturvedi, R.K.</b> & Raghubanshi, A.S. (2018) A functional trait approach for understanding woody species assemblage in tropical deciduous forest. <i>International Journal of Hydrology</i> 3(3): 167-169.   |    |       |
| 22  | <b>Chaturvedi, R.K.</b> & Raghubanshi, A.S. (2018) Leaf size and specific leaf area of tropical deciduous trees increase with elevation in soil moisture content. <i>International Journal of Hydrology</i> 2(4): 466-469.   |    |       |
| 23  | <b>Chaturvedi, R.K.</b> , Pandey, S.K., Bhadouria, R., Singh, S., Raghubanshi, A.S. (2018) Phenotypic plasticity of morphological traits determine the performance of woody species in tropical dry forest. <i>International Journal of Hydrology</i> 2(4): 516-518.                   |    |       |

Authors with bold names are from CIC.

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## 5. Academic Exchange

CIC members attended a number of academic activities involving ecology, botany, biodiversity conservation, biogeography, etc.

This year, 52 people participated in domestic and international conferences.

CIC researchers gave 30 presentations in domestic conferences and 18 in international conferences.



## 5.1 Conferences

### Conferences attended

#### Domestic Conferences

| NO. | Conference name   | Presentation title   | Reporter         | Category       | Field                | Place & date               |
|-----|---|--|------------------|----------------|----------------------|----------------------------|
| 1   | The 1st meeting of the 2nd Council of the Southeast Asian Biodiversity Research Center of the Chinese Academy of Sciences |  | Yunhong Tan      |                |                      | Kunming 5.3                |
| 2   | The 3rd Yunnan International Talent Exchange Conference   | Promoting Innovative Biodiversity Research: Capacity Building via International Talent Recruitment and Training  | Harald Schneider | Keynote Speech | Biodiversity         | Kunming 6.12               |
| 3   | The 9th National Conference on Ethnobotany and the 8th Asia-Pacific Forum on Ethnobotany                                  | Plants for people and People for plants  | Richard Corlett  | Oral report    | Biodiversity         | Kunming 7.13-7.14          |
| 5   | The 13th National Symposium on Biodiversity Science and Conservation  | Potential impacts of climate change on Xishuangbanna National Nature Reserve   | Ruichang Quan    | Oral report    | Conservation Biology | Huhehaote 8.15-8.17        |
| 5   | The 13th National Symposium on Biodiversity Science and Conservation  | Effects of forest fragmentation on rodent-plant interaction  | Bo Wang          | Oral report    | Conservation Biology | Huhehaote 8.15-8.17        |
| 6   | The 13th National Symposium on Biodiversity Science and Conservation  | The influence of environmental factors on variation of breeding density, nest success, hatching rate and growth rate a tropical bird: white-rumped Munia ( <i>Lonchura striata</i> ) | Chenyang Liu     | Oral report    | Conservation Biology | Huhehaote 8.15-8.17        |
| 7   | One Belt and One Road International Symposium on Plant Diversity and Conservation   | Application of molecular techniques in biodiversity and conservation   | Wenbin Yu        | Oral report    | Biology conservation | Kunming 9.9-9.22           |
| 8   | The 16 <sup>th</sup> National Congress of the Chinese Botanical Society and the 85 anniversary academic Conference        | Evolutionary variations of plastome in parasitic Orobanchaceae   | Wenbin Yu        | Oral report    | Genomics             | Kunming Yunnan 10.10-10.13 |

| NO. | Conference name  | Presentation title  | Reporter          | Category             | Field                | Place & date               |
|-----|--|---|-------------------|----------------------|----------------------|----------------------------|
| 9   | The 16 <sup>th</sup> National Congress of the Chinese Botanical Society and the 85 anniversary academic Conference   | Utility of plastome divergence hotspots for species identification in <i>Gastrochilus</i> (Orchidaceae) | Fengxia Tang      | Oral report & Poster | Conservation Biology | Kunming Yunnan 10.10-10.13 |
| 10  | The 16 <sup>th</sup> National Congress of the Chinese Botanical Society and the 85 anniversary academic Conference   | Evolution of Angiosperm pollen size ——for example of <i>Pedicularis</i>                                 | Xin Li            | Poster               | Conservation Biology | Kunming Yunnan 10.10-10.13 |
| 11  | The "One Belt, One Road" International Scientific Organization Alliance Inaugural Meeting and the Second "One Belt, One Road" International Symposium on Science and Technology Innovation |   | Richard Corlett   |                      |                      | Beijing 11.4-11.5          |
| 12  | Xishuangbanna National Nature Reserve Biodiversity Monitoring Training Course  | The basis of plant taxonomy and how to identify common wild plants in Banna                             | Yunhong Tan       | Teaching             | Conservation Biology | Mengla 11.7-11.8           |
| 13  | 2018 Asian Museum of Specimens International symposium   | Herbarium genetics and genomics: challenges and perspective   | Wenbin Yu         | Oral report          | Genomics             | Shanghai 11.17-11.18       |
| 14  | Science and Technology Cooperation Exchange meeting for National Nature Reserve Management and Protection Bureau and XTBG  | Potential applications of eDNA metabarcoding in biodiversity monitoring and reserve management          | Beng Kingsly Chuo | Oral report          | Ecology              | Pu'er, Yunnan 11.21-11.23  |
| 15  | National Conference on Systematic and Evolutionary Botany  | New insights to the origin of land plants   | Harald Schneider  | Plenary              | Phylogeny            | Wuhan 11.23-11.26          |
| 16  | 2018 Annual Conference of Xishuangbanna tropical botanical garden  | The ecology and evolution of spiny plants – progress so far   | Kyle Tomlinson    | Plenary              | Ecology              | Banna 12.7-12.8            |
| 17  | 2018 Annual Conference of Xishuangbanna tropical botanical garden  | The impacts of climate change on tropical East Asia: past, present, and future                          | Richard Corlett   | PI report            | Conservation Biology | Banna 12.7-12.8            |
| 18  | 2018 Annual Conference of Xishuangbanna tropical botanical garden  | Plant Diversity in Deep Time  | Harald Schneider  | PI report            | Phylogeny            | Banna 12.7-12.8            |
| 19  | 2018 Annual Conference of Xishuangbanna tropical botanical garden  | Work summary for Animal behaviour and changing environments group                                       | Ruichang Quan     | PI report            | Ecology              | Banna 12.7-12.8            |

| NO. | Conference name   | Presentation title   | Reporter             | Category     | Field                | Place & date    |
|-----|---|--|----------------------|--------------|----------------------|-----------------|
| 20  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Biogeography of the savanna-like vegetation in hot dry valleys in southwestern China with reference to their floristic origin and evolution  | Hua Zhu              | PI report    | Biogeography         | Banna 12.7-12.8 |
| 21  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | China's ecological civilization program and environmental health in XTBG   | Yang Bai             | Youth report | Ecology              | Banna 12.7-12.8 |
| 22  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Rodent dispersed plant produced optimal sized seeds: a result of tradeoff between seed size and numbers  | Lin Cao              | Youth report | Ecology              | Banna 12.7-12.8 |
| 23  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Fungal assemblages in karst and non-karst forests: a study using eDNA metabarcoding  | Beng Kingsly Chuo    | Youth report | Ecology              | Banna 12.7-12.8 |
| 24  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Genomic diversification pattern and demographic profiles of the gold-thread nanmu tree ( <i>Phoebe zhennan</i> , Lauraceae) from evergreen broad-leaved forests in subtropical southwest China | Jianhua Xiao         | Youth report | Phylogeny            | Banna 12.7-12.8 |
| 25  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Species distribution and phylogenetic pattern of pteridophyte in Eastern Myanmar in comparison with Yunnan   | Phyo Kay Kine        | Youth report | Phylogeny            | Banna 12.7-12.8 |
| 26  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Polyploidy in the MacroEvolution of Ferns  | Tao Fujiwara         | Youth report | Phylogeny            | Banna 12.7-12.8 |
| 27  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Importance of karsts for biodiversity and conservation, a study case on Southeast Asian ferns and lycophytes   | Lucie Bauret         | Youth report | Phylogeny            | Banna 12.7-12.8 |
| 28  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Emerging Features of Tropical Dry Deciduous Forest   | Ravi Kant Chaturvedi | Youth report | Conservation Biology | Banna 12.7-12.8 |

| NO. | Conference name   | Presentation title   | Reporter             | Category | Field                | Place & date    |
|-----|---|--|----------------------|----------|----------------------|-----------------|
| 29  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Utility of plastome divergence hotspots for species identification in <i>Gastrochilus</i> (Orchidaceae)  | Fengxia Tang         | Poster   | Phylogeny            | Banna 12.7-12.8 |
| 30  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Determinants of plant diversity in Myanmar Dry Dipterocarp Forest  | Thiri Toe Khaing     | Poster   | Conservation Biology | Banna 12.7-12.8 |
| 31  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Inferring vegetation patterns in Tropical East Asia using stacked species distribution models  | Ralph Sedricke Lapuz | Poster   | Ecology              | Banna 12.7-12.8 |
| 32  | 2018 Annual Conference of Xishuangbanna tropical botanical garden | Influence of climate factors on breeding activities, reproductive success, and growth of a tropical bird: the White-rumped Munia ( <i>Lonchura striata</i> ) | Chenyang Liu         | Poster   | Ecology              | Banna 12.7-12.8 |

#### International Conferences

| NO. | Conference name  | Presentation title  | Reporter         | Category              | Field                   | Place & date                 |
|-----|--|---|------------------|-----------------------|-------------------------|------------------------------|
| 1   | Seminar on "Protecting natural space to ensure our future: a development strategy beyond 2020" | Space for Nature in Tropical East Asia  | Richard Corlett  | Poster                | Conservation Biology    | London, England 2.27-2.28    |
| 2   | The 15th Annual Conference for Tropical Grassland Science Network                              | Patterns of onset and biomass investment in spinescence in early saplings across the Angiosperm phylogeny | Armani Mohammed  | Oral report           | Ecology                 | South Africa Skukuza 3.4-3.8 |
| 3   | Annual conference for European Conference of Tropical Ecology                                  | The importance of bats in the old world tropics and the threat to their future survival                   | Alice Hughes     | Plenary               | Biological conservation | Paris 3.26-29                |
| 4   | The 2nd Global Bioeconomy Summit   | Sustainability definitions & monitoring – the Achilles Heel of Bioeconomy?                                | Harald Schneider | Roundtable conference | Bioeconomics            | Berlin, Germany 4.19-4.20    |
| 5   | Meeting on vulnerability assessment to Climate Change in Southeast Asia                        |   | Richard Corlett  |                       | Conservation Biology    | Hongkong 5.8-5.12            |

| NO. | Conference name  | Presentation title  | Reporter                          | Category    | Field                   | Place & date                   |
|-----|--|---|-----------------------------------|-------------|-------------------------|--------------------------------|
| 6   | Editorial board meeting for journal of “Global Ecology and Conservation” and “Biological Conservation” |   | Richard Corlett                   |             | Conservation Biology    | Amsterdam 5.23-5.26            |
| 7   | The 55 <sup>th</sup> annual meeting of the Association for Tropical Biology and Conservation (ATBC)    | Anthropogenic climate change in Southeast Asia and its impacts on biodiversity  | Richard Corlett                   | Oral report | Conservation Biology    | Kuching, Malaysia 7.1-7.5      |
| 8   | The 55 <sup>th</sup> ATBC Annual Conference  | How many sampling events per year are required to quantify biodiversity change?   | Beng Kingsly Chuo                 | Oral report | Ecology                 | Kuching, Malaysia 7.1-7.5      |
| 9   | The 55 <sup>th</sup> ATBC Annual Conference  | Vertical Gradient in Bryophyte Diversity and Species Composition in Tropical and Subtropical Forest in Yunnan, SW China | Ting Shen                         | Oral report | Conservation Biology    | Kuching, Malaysia 7.1-7.5      |
| 10  | The 55 <sup>th</sup> ATBC Annual Conference  | Decline in soil moisture availability elevate the effects of disturbances in tropical dry forest                        | Ravi Kant Chaturvedi              | Oral report | Ecology                 | Malaysia 7.1-7.5               |
| 11  | The 55 <sup>th</sup> ATBC Annual Conference  | Herb layer diversity of savanna physiognomy in Yunnan, China  | Mengqi Zhang                      | Poster      | Ecology                 | Malaysia 7.1-7.5               |
| 12  | The 7th International Leguminosae Conference   | Environmental barriers between biomes: how hard are they to overcome and how do trees contribute to create them?        | Tristan Raphael Charles-Dominique | Oral report | Ecology                 | Sendai, Japan 8.29-9.2         |
| 13  | The Second tropical plant identification and forest management training course                         | The past, present, and future of Southeast Asia’s plant diversity   | Richard Corlett                   | Oral report | Biological conservation | Nay Pyi Taw, Myanmar 9.15-9.25 |
| 14  | The Second tropical plant identification and forest management training course                         | Taxonomy of Angiosperms I. II. III.   | Yunhong Tan                       | Oral report | Taxonomy                | Nay Pyi Taw, Myanmar 9.15-9.25 |
| 15  | The Second tropical plant identification and forest management training course                         | Assessment and Conservation of the unique Pteridophyte Flora of Myanmar   | Harald Schneider                  | Oral report | Biological conservation | Nay Pyi Taw, Myanmar 9.15-9.25 |

| NO. | Conference name  | Presentation title   | Reporter     | Category    | Field        | Place & date                   |
|-----|--|--|--------------|-------------|--------------|--------------------------------|
| 16  | The Second tropical plant identification and forest management training course | Phylogenetic and Phylogenomic analysis of Plants: taking Lauraceae for example                       | Yu Song      | Oral report | Phylogeny    | Nay Pyi Taw, Myanmar 9.15-9.25 |
| 17  | The Second tropical plant identification and forest management training course | An introduction to the main forest vegetation types of mainland SE Asia (Indochina peninsula)        | Hua Zhu      | Plenary     | Biogeography | Nay Pyi Taw, Myanmar 9.15-9.25 |
| 18  | The Second tropical plant identification and forest management training course | Biodiversity loss with land use changes in tropical forest—a case study in southern Yunnan, SW China | Hua Zhu      | Plenary     | Biogeography | Nay Pyi Taw, Myanmar 9.15-9.25 |
| 19  | The Second tropical plant identification and forest management training course | Taxonomy of Orchidaceae  | Jianwu Li    | Plenary     | Biogeography | Nay Pyi Taw, Myanmar 9.15-9.25 |
| 20  | The 2 <sup>nd</sup> Silk Road Conference                                       | Understand and reduce the impact of ‘Belt and Road’ on the environment                               | Alice Hughes | Plenary     | Ecology      | Bishkek, Kyrgyzstan 10.26      |

### Conferences/training organized by CIC

| NO. | Name  | International /domestic | Sponsor/organizer                                | Chairman         | Date        | Number of participants |
|-----|---|-------------------------|--|------------------|-------------|------------------------|
| 1   | Advanced Statistics Training Course   | Domestic                | XTBG, CAS  | Kyle Tomlinson   | 3.25-3.31   | 19                     |
| 2   | Training course on “Application of Geographic Information Systems in Ecology and Species Distribution Models” | International           | XTBG, CAS  | Alice C. Hughes  | 7.1-7.5     |                        |
| 3   | Advanced scientific paper writing   | Domestic                | XTBG, CAS  | Richard Corlett  | 8.12-8.17   | 18                     |
| 4   | Course on Phylogenetics in Biodiversity Research  | Domestic                | XTBG, CAS  | Harald Schneider | 8.19-8.31   | 26                     |
| 5   | The Second tropical plant identification and forest management training course                                | International           | XTBG /Myanmar Forestry Research Institute/SEABRI |                  | 9.17-9.24   | 35                     |
| 6   | The 10 <sup>th</sup> Advanced Field Course in Ecology and Conservation  | International           | XTBG, CAS  | Richard Corlett  | 10.16-11.26 | 30                     |

## 5.2 Visits

### Visitors to the CIC

| NO. | Name                      | Institute  | Date     | Purpose            | Presentation/ time   | Group                                    |
|-----|---------------------------|--|----------|--------------------|--|--|
| 1   | Hong Ma                   | Pennsylvania State University                                | 3.27     | Academic exchanges | Using nuclear genes from transcriptomic datasets to investigate angiosperm phylogenies at deep and family/genus levels and analyses of related evolutionary problems | Biodiversity Research Group              |
| 2   | Simon Scheiter            | Senckenberg Biodiversity and Climate Research Centre         | 4.4-4.20 | Academic exchanges | Projecting biome boundaries, functional diversity and human impacts in savannas – insights from dynamic vegetation models /2018.4.10                                 | Community Ecology and Conservation Group |
| 3   | Angelica Kristina Monzon  | Protection and Innovation Center, Tagaytay City, Philippines | 5.27-6.5 | Academic exchanges | Mapping Key Conservation Areas and Natural Capital Phase 2: Forest Formations/2018.6.4   | Community Ecology and Conservation Group |
| 4   | Abraham Nqabutho Dabengwa | University of Cape Town, South Africa                        | 6.1-6.30 | Academic exchanges | Long-term ecosystem stability in contrasting grasslands of South Africa/2018.6.11  | Community Ecology and Conservation Group |
| 5   | Xulin Chen                | Wuhan Institute of Virology, CAS                             | 3.21     | Academic exchanges | Key technologies for the development of therapeutic drugs for viral infectious diseases and the applications/3.21  | Plant Diversity and Conservation Group   |
| 6   | Georg Miehe               | University of Marburg, Germany                               | 8.03     | Academic exchanges | Why to study Diversity Patterns in the East Himalaya-Yunnan Biodiversity Hotspot ?/2018.8.4  | Macroevolution Research Group            |
| 7   | Yinong Yang               | Pennsylvania State University                                | 12.26    | Academic exchanges | CRISPR/Cas9-enabled plant genome editing and precision breeding  | Biodiversity Research Group              |

### Visits abroad

| No. | Name            | Visiting institute            | Purpose  | Duration            |
|-----|-----------------|-------------------------------|--|---------------------|
| 1   | Yang Bai        | University of Kentucky        | One year research scholar at University of Kentucky  | 2017.9.25-2018.9.25 |
| 2   | Wenbin Yu       | Pennsylvania State University | Chinese Academy of Sciences he studied expense study abroad program "Young Visiting Scholar" project | 2018.1.1-7.5        |
| 3   | Richard Corlett | Aarhus University, Denmark    | Review of graduation reply for doctoral students   | 2018.3.6-3.10       |

|    |  |  |   |                |
|----|--|--|---|----------------|
| 4  | Yunhong Tan,<br>Bin Yang,<br>Hongbo Ding,<br>Xiaodong Zeng           | Nam Ha National Bio-Diversity Park, Phou Hin Phee National Bio-Diversity Park, Phou Dean Din National Bio-Diversity Park and Phouthaleng Protected Areas in northern Lao PDR | Biodiversity investigation  | 2018.3.20-4.12 |
| 5  | Harald Schneider   | The Natural History Museum in Berlin, Germany  | In-depth discussion of academic exchanges and cooperation between XTBG and the Natural History Museum, and participates in the 2nd Global Bioeconomy Summit held on April 19-20   | 2018.4.09-4.28 |
| 6  | Kyle Tomlinson,<br>Tristan Raphael Charles-Dominique,<br>Uriel Gelin | Chitwan National Park in Nepal   | Study the dynamic interaction between plants and herbivores, how plant characteristics affect the foraging behavior, spatial and temporal distribution of hoofed animals, and how they affect the vegetation structure of Chitwan National Park in Nepal.     | 2018.5.20-5.27 |
| 7  | Liping Zhou  | Niigata University) and Hirosaki University  | China-Japan Youth Science and Technology Exchange Program   | 2018.7.22-7.31 |
| 8  | Yunhong Tan,<br>Bin Yang,<br>Hongbo Ding,<br>Xiaodong Zeng           | Hkakaborazi National Park in northern Myanmar  | Biodiversity investigation  | 2018.5.23-6.26 |
| 9  | Uriel Jesue Govinda Gelin  | Reserve Zoologique de La Haute Touche in France  | Mainly to test the effects of feeding behavior of different mammalian herbivores on plant growth and structure.   | 2018.8.4-10.4  |
| 10 | Harald Schneider   | University of the West of England, Royal Botanic Garden Edinburgh, University of Bristol Botanical Garden  | Explore cooperation and exchanges in the field of protection of endangered ferns, investigate collection, scientific research and display, and further expand and strengthen exchanges and cooperation with world-classed universities and botanical gardens. | 2018.8.26-9.06 |
| 11 | Kyle Tomlinson   | South African National Biodiversity Institute (SANBI)  | Shared experience and thoughts in <i>in situ</i> , <i>ex situ</i> conservation, reintroduction, and management of native plants and discussed protection and management of national parks with the African counterparts.                                      | 2018.8.30-9.6  |
| 12 | Phyo Kay Kine  | The Second tropical plant identification and forest management training course   | Took part in course teaching  | 2018.9.15-9.25 |



|    |   |  |   |                  |
|----|---|--|---|------------------|
| 13 | Bonifacio Pasion, Ralph Sedricke Lapuz, Yun Lu    | Lao National University                                | Discussed the cooperation on the grassland vegetation ecosystem research in Laos and conducted relevant field investigations. | 2018.9.25-10.14  |
| 14 | Yunhong Tan, Bin Yang, Hongbo Ding, Xiaodong Zeng | Nam Ha National Bio-Diversity Park in northern Lao PDR | Biodiversity investigation  | 2018.10.8-10.29  |
| 15 | Yunhong Tan, Bin Yang, Hongbo Ding, Xiaodong Zeng | Nay Pyi Tow and Natma Taung National Park in Myanmar   | Biodiversity investigation  | 2018.11.17-12.15 |

### Academic activities:

#### CIC researchers participate in the international conference on climate change and nature conservation

From February 22-28th, Richard Corlett, Director of the CIC, attended two meetings in London: the PIs meeting of the "Spatial planning project on climate change response in protected areas (SPARC)" at Kew Gardens and the "Protection of natural space to protect our future: development of a strategy beyond 2020" seminar at the



Zoological Society of London.

At the ZSL seminar, Richard Corlett presented a poster entitled "Space for Nature in tropical East Asia", which discussed possible options for increasing protected areas in tropical East Asia today and in the future. The participation of scientific researchers in these two international conferences will promote cooperation and exchange between XTBG and international research organizations, and its assessment results and recommendations will

become an important part of global climate change and protected area development, contributing to the cause of global species conservation.

#### Advanced Statistics Training Course held in 2018

From March 25th to 31st, 2018, the Advanced Statistics Training Course was held at XTBG. The course was delivered by Kyle Tomlinson, the PI of the Community Ecology and Conservation Research Group in the Center for Integrative Conservation. A total of 19 participants from XTBG, South China Botanical Garden, Beijing Institute of Zoology, Research Center for Eco-Environmental Sciences, CAS, Guangxi University attended the training.



## Course on Phylogenetics in Biodiversity Research held in 2018



From August 19<sup>th</sup> to 31<sup>st</sup>, the course on Phylogenetics in Biodiversity Research was held in XTBG. The main instructors were Harald Schneider, Lucie Bauret, Tao Fujiwara, and Phyo Kay Kine from the Macroevolution Group and Ma Hui, Meng Honghu and Li Lang from the Plant Phylogenetics and Conservation Group. This course provided an introduction to the theory and methods employed to reconstruct and interpret the tree-of-life, and the usage of molecular phylogenetic tools in applied biodiversity research such as molecular taxonomy and metabarcoding.

## Advanced scientific paper writing course held in 2018

Prof. Richard Corlett ran the Advanced Scientific Writing course on August 12<sup>th</sup> to 17<sup>th</sup> for graduate students from XTBG. The course covered the entire process, from preparing to submitting a scientific research paper, and dealing with reviewer comments. It aimed to teach the knowledge and skills needed to publish scientific papers in international journals.



## CIC participated in conferences:



The 2018 European Conference of Tropical Ecology was held in Pierre and Marie Curie University in Paris, France during March 26<sup>th</sup> to 29<sup>th</sup>. Alice C. Hughes gave a presentation titled “Importance of bats in the old world tropics and the threats to their future survival”, demonstrating the important roles that bats play in the global ecosystem and the projects centered on bats done by researchers in the Landscape Ecology Research Group of the CIC in Southeast Asia.

Prof. Harald Schneider attended the 2nd Global Bioeconomy Summit held at Berlin (Germany) from April 18<sup>th</sup> to 20<sup>th</sup> as one of the discussion leaders of the workshop on “Innovation & Environment: Biodiversity for a sustainable and thriving Bioeconomy” in April 19<sup>th</sup>. The summit aimed to provide a discussion forum to experts with different backgrounds with special emphasis on collaboration between regions and disciplines. Of special interest to XTBG were the workshops that explored conservation of biodiversity as a crucial component to achieve a sustainable bioeconomy.





The 3rd Yunnan Conference on International Exchange of Professionals was opened on June 12<sup>th</sup> in Kunming, with attendance of over 600 professionals. Prof. Harald Schneider of CIC was invited to attend the conference and gave a speech entitled “Promoting Innovative Biodiversity Research: Capacity Building via International Talent Recruitment and Training”, which won warm applause from the audience.

The 55th Annual Meeting of the Association for Tropical Biology and Conservation (ATBC) was held in Kuching, Sarawak, Malaysia from July 1<sup>st</sup> to 5<sup>th</sup>. Six researchers from the CIC, including Richard Corlett, Alice Hughes, and Beng Kingsly Chuo participated in ATBC 2018. They presented their research work progress via oral or poster presentations in various symposia.



The National Conference on Systematic and Evolutionary Botany organized by the Wuhan Botanical Garden was held in Wuhan on Nov. 23<sup>rd</sup> to 26<sup>th</sup>. Harald Schneider presented a Key-lecture with the title: “New Insights to the Origin of Land Plants”. XTBG showed a strong presence with 6 participants, including Prof. Jie Li from the CIC.



## **6. Team Building and Talent Training**

In 2018, CIC researchers held positions in 12 domestic and international organizations, and 26 domestic and international journals.

A total of 8 students graduated in 2018, 5 with MScs and 3 with PhDs. 3 postdocs passed their final appraisals.

6 CIC members got awards in 2018.

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## 6.1 Positions in Organizations and Journals

### Positions in Domestic and International Academic Organizations

| NO. | Name                 | Organization name   | Position   | Duration time  |
|-----|----------------------|---|--|----------------|
| 1   | Richard Corlett      | Spatial Planning for Protected Areas in Response to Climate Change                        | Asia principal investigator                                      | 2015.5-2018.12 |
| 2   | Richard Corlett      | Climate Change Specialist Group, Species Survival Commission of the IUCN                  | Member, Steering Committee                                       | 2012.7-2018.12 |
| 3   | Richard Corlett      | Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) | Lead Author for the Regional Assessment for Asia and the Pacific | 2015.1-2018.1  |
| 4   | Richard Corlett      | Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) | committee member   | 2014.1-2018.1  |
| 5   | Alice Hughes         | Association for Tropical Biology and Conservation Asia-Pacific Chapter                    | Secretary-General  | 2015.1-2018.1  |
| 6   | Alice Hughes         | Association for Tropical Biology and Conservation   | committee member   | 2014.1-2018.1  |
| 7   | Ma Youxin            | Forestry Meteorological Committee of Chinese Society of Forestry                          | Member, Standing Committee                                       | 2006.10-       |
| 8   | Hua Zhu              | China Forest Landscape Resources Valuation Committee                                      | committee member   | 2010-          |
| 9   | Hua Zhu              | Yunnan National Park Review Committee   | committee member   | 2014-          |
| 10  | Hua Zhu              | Yunnan National Reserves Evaluation Committee   | committee member   | 2017-          |
| 11  | Ravi Kant Chaturvedi | International Society for Tropical Ecology  | Life member  |                |
| 12  | Ravi Kant Chaturvedi | Association for International Scientific Congress   | Life member  |                |

### Positions in Domestic and International Academic Journals

| NO. | Name             | Academic journal                                   | ISSN      | Position                  | Duration time |
|-----|------------------|--|-----------|---------------------------|---------------|
| 1   | Richard Corlett  | Global Ecology and Conservation                    | 2351-9894 | Chief Editor              | 2014.1-       |
| 2   | Richard Corlett  | Biological Conservation                            | 0006-3207 | Associate Editor          | 2008.1-       |
| 3   | Richard Corlett  | Ecology, Ecological Monographs                     | 0012-9615 | Subject Matter Editor     | 2012.1-       |
| 4   | Richard Corlett  | Plant Diversity                                    | 2095-0845 | Associate Editor in Chief | 2016.1-       |
| 5   | Richard Corlett  | Pertanika Journal of Tropical Agricultural Science | 1511-3701 | Editorial Board           | 2011.6-       |
| 6   | Richard Corlett  | Tropical Conservation Science                      | 1940-0829 | Associate Editor          | 2009.1-       |
| 7   | Harald Schneider | Australian Systematic Botany                       | 1030-1887 | Associate Editor          | 2013-         |
| 8   | Harald Schneider | Journal of Systematics and Evolution               | 1674-4918 | Editor                    | 2010-         |
| 9   | Harald Schneider | Frontiers in Evolutionary and Population Genetics  |           | Editorial Board           | 2013-         |

| NO. | Name                 | Academic journal                              | ISSN      | Position         | Duration time |
|-----|----------------------|---|-----------|------------------|---------------|
| 10  | Harald Schneider     | Fern Gazette                                  |           | Editorial Board  | 2012-         |
| 11  | Harald Schneider     | Guihaia                                       | 1000-3142 | Editorial Board  | 2011-         |
| 12  | Harald Schneider     | Journal of Botany                             | 0002-9122 | Editorial Board  | 2012-         |
| 13  | Harald Schneider     | Species, Phylogeny and Evolution              |           | Editorial Board  | 2006-         |
| 14  | Alice Hughes         | Journal of Animal Ecology                     | 1365-2656 | Associate Editor | 2014-         |
| 15  | Alice Hughes         | Heliyon (Elsevier)                            | 2405-8440 | Editor           | 2015-         |
| 16  | Alice Hughes         | Ecotropica                                    | 0949-3026 | Editor           | 2015-         |
| 17  | Alice Hughes         | Ecosystem Health and Sustainability           | 2332-8878 | Editor           | 2016-         |
| 18  | Hua Zhu              | Journal of Systematics and Evolution          | 1674-4918 | Editorial Board  | 2004-         |
| 19  | Hua Zhu              | Tropical Conservation Science                 | 1940-0829 | Editorial Board  | 2008-         |
| 20  | Hua Zhu              | Guihaia                                       | 1000-3142 | Editorial Board  | 1996.5-       |
| 21  | Hua Zhu              | Plant Science Journal                         | 2095-0837 | Associate Editor | 2000-         |
| 22  | Ravi Kant Chaturvedi | Climate Change & Environmental Sustainability |           | Associate Editor |               |
| 23  | Ravi Kant Chaturvedi | International Journal of Hydrology            | 0022-1694 | Associate Editor |               |
| 24  | Ravi Kant Chaturvedi | Asian Journal of Environment & Ecology        |           | Academic Editor  |               |
| 25  | Ravi Kant Chaturvedi | Special Issue in Scientifica                  |           | Chief Editor     |               |
| 26  | Harald Schneider     | Journal Plant Research                        | 0918-9440 | Editorial Board  | 2018-         |

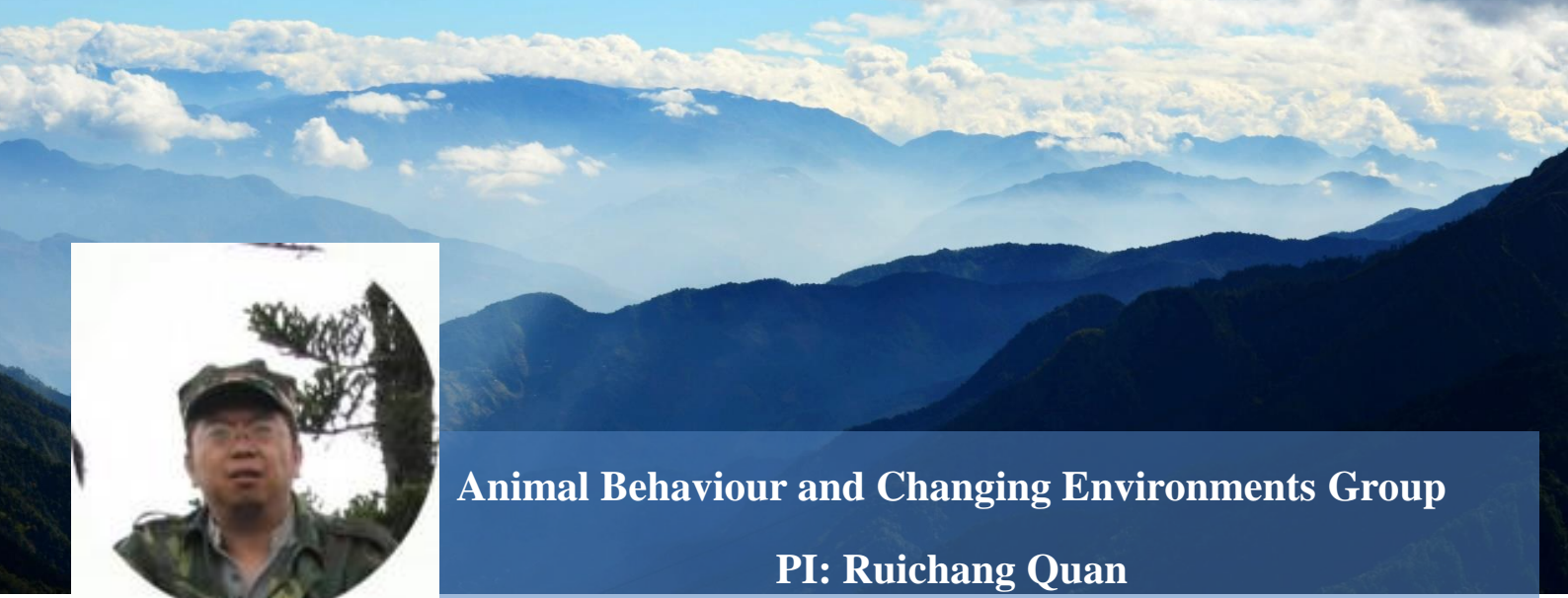
## 6.2 Talent Training

### Postgraduates and postdocs who graduated in 2018

| NO. | Name                              | Degree  | Supervisor      | Graduate time |
|-----|-----------------------------------|---------|-----------------|---------------|
| 1   | Xin Ding                          | PhD     | Jie Li          | 2018.7        |
| 2   | Xiuqin Ci                         | PhD     | Jie Li          | 2018.7        |
| 3   | Qinxi Hou                         | Master  | Jie Li          | 2018.7        |
| 4   | Ting Shen                         | Master  | Richard Corlett | 2018.7        |
| 5   | Mengqi Zhang                      | Master  | Kyle Tomlinson  | 2018.7        |
| 6   | Xia Yuan                          | Master  | Bin Wen         | 2018.7        |
| 7   | Yang Mao                          | Master  | Youxin Ma       | 2018.7        |
| 8   | Bonifacio Ordonio Pasion          | PhD     | Kyle Tomlinson  | 2018.12       |
|     |                                   |         |                 |               |
| 1   | Ana R. Gouveia                    | Postdoc | Ruichang Quan   | 2018          |
| 2   | Ravi Kant Chaturvedi              | Postdoc | Kyle Tomlinson  | 2018.12       |
| 3   | Tristan Raphael Charles-Dominique | Postdoc | Kyle Tomlinson  | 2018.12       |

### Award

| Award winner                      | Award name   | Issued by  | Rank         |
|-----------------------------------|--|--|--------------|
| Harald Schneider                  | The 14th Chinese “Thousand Talents Program”        | Organization Department of the CPC   |              |
| Ruichang Quan                     | CAS outstanding CPC member                         | CAS  |              |
| Richard Corlett                   | Honorary Fellows                                   | Association for Tropical Biology and Conservation  |              |
| Ravi Kant Chaturvedi              | Yunnan post-doctoral outstanding achievement award | Yunnan Provincial Department of Human Resources and Social Security, Yunnan Provincial Department of Finance | Second prize |
| Tristan Raphael Charles-Dominique | Yunnan post-doctoral outstanding achievement award | Yunnan Provincial Department of Human Resources and Social Security, Yunnan Provincial Department of Finance | Third prize  |
| Fengxia Tang                      | Postgraduate national scholarship                  | National Ministry of Education and Finance   |              |



## Animal Behaviour and Changing Environments Group

**PI: Ruichang Quan**

**Ruichang Quan,**

Ph.D., Professor

Major research directions: behavioral ecology, animal-mediated seed dispersal (birds and mammals), biodiversity conservation.

The Animal Behaviour and Changing Environments research group was established in June 2012 within the Centre for Integrative Conservation at XTBG. The group focuses on the highly biodiverse regions of tropical Southwest China and Southeast Asia, with study topics encompassing: 1) animal ecology (in particular seed dispersal and behavioral ecology), and 2) environmental change and conservation (particularly focused on the effects of habitat loss, fragmentation, and anthropogenic disturbance on avian and mammalian community distribution and composition).



**Bo Wang**

Ph.D., Associate Professor

Major research directions: seed dispersal and predation; evolution of seed traits; animal foraging behavior.



**Lin Cao**

Ph.D., Associate Professor

Major research directions: seed dispersal; the hoarding behavior of rodents and its evolution.



**Mingxia Zhang**

Ph.D., Assistant Professor

Major research directions: the impact of forest fragmentation on biodiversity; avian ecology and conservation.

**Postdoc:**

Guogang Li; Zhanqi Chen

**PHD students:**

Hem; Kang Luo; Lili Li; Liping Zhou; Chenyang Liu; Lamei Wu

**Master students:**

Aye Myat Thu; Lwin; Yixuan Hong; Yunchun Zhang; Mingxiao Yan; Bing Dong;

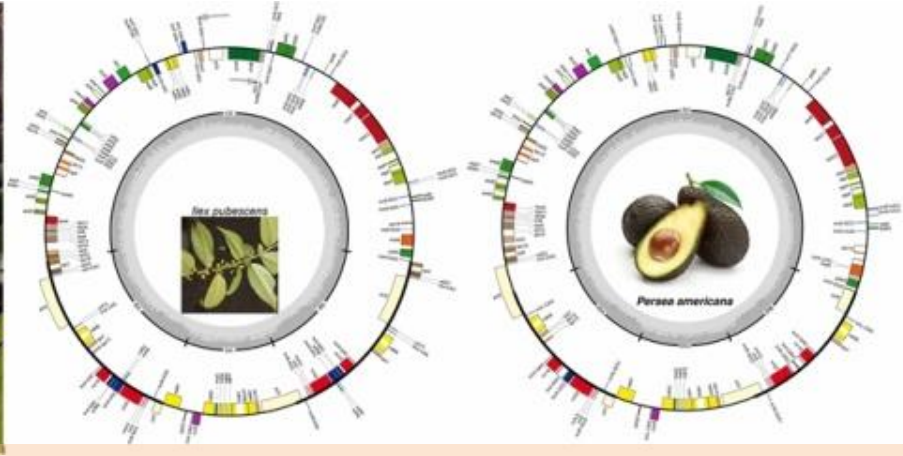


### Publications in 2018:

- Chen, Z.Q.**, Corlett, R.T., Jiao, X.G., Liu, S.J., Charles-Dominique, T., Zhang, S.C., Li, H., Lai, R., Long, C.B., **Quan, R.C.\*** (2018) Prolonged milk provisioning in a jumping spider. *Science* 362: 1052-1055.
- Cao, L.\***, **Wang, B.**, Yan, C., Wang, Z.Y., Zhang, H.M., Geng, Y.Z., Chen, J., Zhang, Z.B. (2018) Risk of cache pilferage determines hoarding behavior of rodents and seed fate. *Behavioral Ecology* 29(4): 984-991.
- Wang, B.\***, Phillips, J.S., **Tomlinson, K.W.** (2018) Tradeoff between physical and chemical defense in plant seeds is mediated by seed mass. *Oikos* 127: 440–447.
- Cao, L.**, Yan, C., **Wang, Bo.\*** (2018). Differential seed mass selection on hoarding decisions among three sympatric rodents. *Behavioral Ecology and Sociobiology* 72:161

### Projects:

- Bo Wang, 2016 Western Young Scholar A, CAS Fund, 500,000 RMB (total allocated: 400,000 RMB, funding allocated in 2018: 200,000 RMB), 2017/1/1-2019/12/31
- Bo Wang, The Influence of Forest Fragmentation on the Rodent-plant Mutual Relation and Its Ecological Significance, General Program, 744,000 RMB (total allocated: 522,000 RMB, funding allocated in 2018: 150,000 RMB), 2017/10/1-2021/12/31
- Bo Wang, Selection Preference of Rodents in Different Types of Seeds in Different Forest Ecosystems and their Ecological Significance, General Program, 860,000 RMB (total allocated: 860,000 RMB, funding allocated in 2018: 0 RMB), 2015/1/1-2018/12/31
- Ruichang Quan, Biodiversity Monitoring and Network Construction in the Minjiang River-Mekong River Basin, Ministry of S&T Basic Research Project, 2,700,000 RMB (total allocated: 2,700,000 RMB, funding allocated in 2018: 2,700,000 RMB), 2018/1-2020/12
- Lin Cao, Micro-habitat selection of rodents in seed storage sites and the ecological significance in tropical rain forest, General project, 600,000 RMB (total allocated: 600,000 RMB, funding allocated in 2018: 300,000 RMB), 2019/1/1-2022/12/31
- Lin Cao, Selection of microhabitats of seed storage sites in rodents in tropical rain forests and its ecological significance, Local funds, 100,000 RMB (total allocated: 100,000 RMB, funding allocated in 2018: 100,000 RMB), 2018/06/01-2021/05/31
- Ruichang Quan, Yuxi Yubaiding Nature Reserve Comprehensive Scientific Investigation Project Cooperation Agreement, Other Fund, 120,000 RMB (total allocated: 120,000 RMB, funding allocated in 2018: 120,000 RMB), 2018/01/01-2018/12/31
- Ruichang Quan, Animal Diversity and Conservation, Southeast Asian Biodiversity Research Center, Chinese Academy of Sciences, CAS Fund, 1,000,000 RMB (total allocated: 1,000,000 RMB, funding allocated in 2018: 0 RMB), 2018/06/01-2019/05/31



# Biodiversity Research Group PI: Richard Corlett

## Richard Corlett

Ph.D., Professor  
Major research interests: biodiversity conservation and terrestrial ecology in tropical East Asia, plant-animal interactions, climate change biology.



## Wenbin Yu

Ph.D. Associate Professor  
Major research directions: Evolution of the plastome in parasitic plants; systematics and evolution of the large hemiparasitic genus *Pedicularis L.* (Orobanchaceae); and conservation biology of endangered species.



## Pan Bo

Intermediate Experimentalist  
Plant identification, evaluating the conservation status of local plant species, legume taxonomy and phylogeny.



## Yu Song

Ph.D. Associate Professor  
Focusing on the mechanism of functional traits determination and differentiation among tree species of *Machilus* and *Phoebe* (Lauraceae) in tropical and subtropical Asia.

The Biodiversity Research Group was established in July, 2012. The name reflects the original target of ‘filling gaps’ in the new Center for Integrative Conservation, which was being established at the same time. The major gaps identified were 1) remote sensing and spatial analysis, 2) conservation applications of molecular sequence data, 3) climate change biology, 4) conservation theory. The subsequent creation of new groups in the CIC and the re-direction of existing groups have allowed the BRG to narrow its major focus to plant evolution and conservation. Graduate student projects do not necessarily fit under any of these headings, since their principle role is training, and the topics are usually chosen by the student in consultation with their supervisor.



- Postdoc:**  
Beng Kingsly Chuo
- PhD students:**  
Jiaqi Zhang; Nirunrut Pomoim
- Master students:**  
Fengxia Tang; Ying Zhao; Thazin Nwe; Xin Li;  
Pyae Pyae Win; Yuran Li; Ruozhu Li; Liqiong Chen; Mya Bhone Maw
- Group assistant:** Lin Li

## Publications in 2018:

- Chen, H.H.**, Zhang, Y., Peng, Y.Q.\*, **Corlett, R.T.\*** (2018) Latitudinal effects on phenology near the northern limit of figs in China. *Scientific reports* DOI: 10.1038/s41598-018-22548-7.
- Corlett, R.T.** 2018. Tropical rainforests and climate change. In: DellaSala, D.A. and Goldstein, M.I. (eds.), *Encyclopedia of the Anthropocene*, Volume 2, Cambridge University Press, pp. 25-29.
- Corlett, R.T.** 2018. Biodiversity and ecosystem services: Towards ecological security in tropical and subtropical East Asia. *Biodiversity Science* 26(7): 766-774.
- Yu, W.B.\***, Randle, C.P., Lu, L., Wang, H., Yang, J.B., Pamphilis, C.W., **Corlett, R.T.**, Li, D.Z.\* (2018) The hemiparasitic plant *Phtheirospermum* (Orobanchaceae) is polyphyletic and contains cryptic species in the Hengduan Mountains of southwest China. *Frontiers in Plant Science* <https://doi.org/10.3389/fpls.2018.00142>.
- Yu, W.B.\***, Wang, H., Liu, M.L., Grabovskaya-Borodina, A.E., Li, D.Z.\* (2018) Phylogenetic approaches resolve taxonomical confusion in *Pedicularis* (Orobanchaceae): reinstatement of *Pedicularis delavayi* and discovering a new species *Pedicularis milliana*. *PLoS ONE* <https://doi.org/10.1371/journal.pone.0200372>.
- Shen, T.**, **Corlett, R.T.\***, Song, L.\*, Ma, W.Z., Guo, X.L., Song, Y., Wu, Y. (2018) Vertical gradient in bryophyte diversity and species composition in tropical and subtropical forests in Yunnan, SW China. *Journal of Vegetation Science* 29: 1075-1087.
- Song, Y.**, Gan, Y., Liu, L., **Corlett, R. T.\*** (2018) The floral transcriptome of *Machilus yunnanensis*, a tree in the magnoliid family Lauraceae. *Computational biology and chemistry*.
- Tang, F.X.**, **Song, Y.**, Liu, Q.\* (2018) The chloroplast genome of an endangered orchid species, *Gastrochilus calceolaris* (Orchidaceae: Aeridinae). *Mitochondrial DNA Part B* 2(3): 990-991.
- Gao, J.M.**, **Song, Y.\***, Zheng, B. (2018) Complete chloroplast genome sequence of an endangered tree species, *Magnolia sieboldii* (Magnoliaceae). *Mitochondrial DNA Part B* 3(2): 1261-1262.

## Projects:

- Richard Corlett, Developing a plant conservation strategy for China and the world, CAS fund, 2.5 million (Total allocated funding: 2.5 million, Allocated funding in 2018: 0), 2017/01/01-2020/12/31
- Richard Corlett, Spatial Planning for Protected Areas in Response to Climate Change (SPARC), International Cooperation Project, 402,600 RMB (Total allocated funding: 170,500 RMB, Allocated funding in 2018: 97,200 RMB), 2016/09/01-2018/11/30
- Yu Song, Phylogenetic Research on *Phoebe* (Lauraceae), Youth Fund, 238,800 RMB (Total allocated funding: 225,600 RMB, Allocated funding in 2018: 92,800 RMB), 2017/01/01-2019/12/31
- Yu Song, 2017 Young talent cultivation program, Southeast Asian Biodiversity Research Center, Chinese Academy of Sciences, CAS fund, 200,000 RMB (Total allocated funding: 100,000 RMB, Allocated funding in 2018: 100,000 RMB), 2018/01/01-2019/12/31
- Yu Song, 2016 Western Yong Scholar B, CAS fund, 150,000 RMB (Total allocated funding: 100,000 RMB, Allocated funding in 2018: 50,000 RMB), 2017/01/01-2019/12/31
- Wenbin Yu, Analysis of cell genome evolution in parasitic plants: A case study of Orobanchaceae as a branch, General Program, 590,000 RMB (Total allocated funding: 295,000 RMB, Allocated funding in 2018: 295,000 RMB), 2018/10/01-2022/12/31
- Wenbin Yu, Study on digital key technology of genetic information of Dai Pharmaceutical plants in Xishuangbanna, CAS fund, 390,000 RMB (Total allocated funding: 150,000 RMB, Allocated funding in 2018: 150,000 RMB), 2018/11/01-2020/12/31
- Wenbin Yu, Study on genomic evolution of parasitic plant organelles, CAS fund, 370,000 RMB (Total allocated funding: 150,000 RMB, Allocated funding in 2018: 150,000 RMB), 2018/11/01-2020/12/31

Beng Kingsly Chuo, The 4<sup>th</sup> post-doc training fund, Yunnan Province 160,000 RMB (Total allocated funding: 160,000 RMB, Allocated funding in 2018: 80,000 RMB)



**Kyle Tomlinson**

Ph.D., Professor

Research focus: landscape conservation, forest ecology, savanna ecology, functional trait diversity.



**Fei Yu**

Assistant Professor

Research focus: distribution of spiny plants across environmental gradients in Yunnan Province, China.



## Community Ecology & Conservation Group

**PI: Kyle Tomlinson**

The Community Ecology & Conservation Group focuses on species community composition and functional diversity across environmental gradients. The group also conducts research on how communities and populations are evolving subject to changes in land-use and climate, in order to understand their implications for the conservation of plant communities and species. Most of the research is centered on tropical Asia, one of the fastest developing and changing tropical regions in the world. Its once continuous tropical forests are now fragmented and mostly degraded. These changes have put enormous pressures on tropical Asia's natural ecosystems. The group aim is to study these changes and try to find ways to maintain or restore the functions of tropical Asia's natural ecosystems. The group also contributes to basic research through the study of functional trait diversity across environmental gradients at the global scale. These analyses contribute to general understanding of trait selection under resource limitation and herbivory.

### Postdocs:

Uriel Jesus Govinda Gelin

### PhD students:

Amani Mohammed; Ralph Sedricke Lapus; Ma Nina Regina Quibod; Amar Kunwar; Theodore Lefebvre; Artemis Marie Rose Anest; Fei Yu; Yingying Chu; Xianhui Shen

### Master students:

Thiri Toe Khaing

**Research assistants:** Fei Yu; Xin Huang

**Fieldwork assistants:** Yun Lu; Zongze Yang



### **Publications in 2018:**

- Beng, K.C.\***, **Corlett, R.T.**, Tomlinson, K.W. (2018). Seasonal changes in the diversity and composition of the litter fauna in natural forests and rubber plantations. *Scientific Reports* DOI: 10.1038/s41598-018-28603-7.
- Dominique, T.C.\***, Midgley, G.F., **Tomlinson, K.W.**, Bond, W.J. (2018) Steal the light: shade vs fire adapted vegetation in forest–savanna mosaics. *New Phytologist* 218: 1419-1429.
- Pasion, B.O.**, **Roeder, M.**, Liu, J.J., Yasuda, M., **Corlett, R.T.**, Slik, J.W.F., **Tomlinson, K.W.\*** (2018) Trees represent community composition of other plant lifeforms, but not their diversity, abundance or responses to fragmentation. *Scientific Reports* 8:11374.
- Tomlinson, K.W.\***, Sterck, F.J., Barbosa, E.R.M., de Bie, S., Prins, H.H.T., van Langevelde, F. (2018) Seedling growth of savanna tree species from three continents under grass competition and nutrient limitation in a greenhouse experiment. *Journal of Ecology* DOI: 10.1111/1365-2745.13085
- Singh J.S. & **Chaturvedi R.K.** (2018) Tropical Dry Deciduous Forest: Research Trends and Emerging Features. Springer Nature Singapore Pte Ltd., Singapore. eBook ISBN: 978-981-10-7260-4; Hardcover ISBN: 978-981-10-7259-8.

### **Projects:**

- Kyle Tomlinson, The Distribution and Ecological Characteristics of Spiny Plants in Yunnan Province, General Program, 840,000 RMB (total allocated: 934,200 RMB, funding allocated in 2018: 0 RMB), 2014/10/28-2020/12/31
- Kyle Tomlinson, Distribution, Diversity and Conservation of Savanna Grassland Ecosystem in Yunnan Province, Yunnan United Fund, 2,296,800 RMB (total allocated: 2,108,400 RMB, funding allocated in 2018: 664,200 RMB), 2016/3/29-2019/12/31
- Mareike Roeder, Roles of lianas in forest ecosystem food web: a case study in Southwest China, General Program, 732,500 RMB (total allocated: 556,900 RMB, funding allocated in 2018: 216,000 RMB), 2016/11/7-2020/12/31
- Ravi Kant Chaturvedi, Carbon stock and sequestration in pine woodlands of Yunnan, International Cooperation Project, 418,700 RMB (total allocated: 38.6500 RMB, funding allocated in 2018: 32,200 RMB), 2017/11/3-2019/12/31
- Tristan Charles-Dominique, The role of plant architecture in structuring tree, International Cooperation Project, 300,800 RMB (total allocated: 281,600 RMB, funding allocated in 2018: 19,200 RMB), 2017/11/3-2019/12/31
- Uriel Gelin, The evolution and ecological significance of spinescence in plants, International Cooperation Project, 369,700 RMB (total allocated: 343,000 RMB, funding allocated in 2018: 26,600 RMB), 2017/11/03-2019/12/31
- Kyle Tomlinson, Biogeography and Biodiversity of Pinus dominant savannas and Forests in Southeast Asia, General Project, 600,000 RMB (total allocated: 300,000 RMB, funding allocated in 2018: 300,000 RMB), 2018/10/01-2022/12/31



## Landscape Ecology Research Group

PI: Alice Hughes

### Alice Hughes

Ph.D., Associate Professor

Research focus: trying to understand the potential effects of environmental change on the distribution and diversity of Southeast Asian species across extended timescales.

The Landscape Ecology Group is led by Prof. Dr Alice C Hughes. The group is focused on developing and assessing biodiversity patterns across the tropical Asian region.



### Youxin Ma

Ph.D., Professor

Research focus: Ecological impact of land use change, landscape pattern and ecological process, regional ecological security and sustainable development, global change.



### Yang Bai

Ph.D., Assistant professor

Research focus: ecosystem processes, ecosystem services, and management.



### Wenjun Liu

Ph.D., Assistant professor;

Research focus: land use/land cover change and its ecological impacts, landscape pattern quantitative analysis.

**Postdoc:** Tuanjit Sritongchuay

### PhD students:

Ada Chornelia; Kayzin Than; Sreehari Raman; Nasir Uddin; Krizler Tanalgo

### Master students:

Hui Cao; Jianbo Yang; Waraporn Phoncharoen; Chalermchai Taweesub; Zongbao Yang; Ade Prasetyo Agung

### Group assistants:

Yanhua Chen; Zinan Ding; Jianmei Lu; Wuxiang Fu

### **Publications in 2018:**

- Bai, Y.**, Wong, C.P.\*, Jiang, B.\*, **Hughes, A.C.**, Wang, M., Wang, Q. (2018) Developing China's Ecological Redline Policy using ecosystem services assessments for land use planning. *Nature Communications* 9: 3034.
- Hughes, A.C.\*** (2018) Have Indo-Malaysian forests reached the end of the road? *Biological Conservation* 223:129-137.
- Tanalgo, K.C.\***, Tabora, J.A.G., **Hughes, A.C.\*** (2018) Bat cave vulnerability index (BCVI): A holistic rapid assessment tool to identify priorities for effective cave conservation in the tropics. *Ecological Indicators* 89: 852-860.
- Tanalgo, K.C.\***, **Hughes, A.C.\*** (2018) Bats of the Philippine Islands—A review of research directions and relevance to national-level priorities and targets. *Mammalian Biology* 91:46-56.

### **Projects:**

- Alice Hughes, Mapping karst biodiversity in Yunnan Province, Joint Program, 1.94 million RMB (total allocated: 1,546,900 RMB, funding allocated in 2018: 676,400 RMB), 2017/1/1-2020/12/31
- Yang Bai, Study on Spatial Coupling Characteristics of Supply and Demand of Ecosystem Services, Youth Fund, 224,000 RMB (total allocated: 224,000 RMB, funding allocated in 2018: 0 RMB RMB), 2016/1/1-2018/12/31
- Wenjun Liu, Research on landscape function connectivity dynamics and restoration of forest landscape in Xishuangbanna, Local Natural Science Foundation, 100,000 RMB (total allocated: 100,000 RMB, funding allocated in 2018: 0 RMB), 2015/7/1-2018/6/30
- Tuanjit Sritongchuay, The 4<sup>th</sup> post-doc training fund, Yunnan Province, 160,000 RMB (total allocated: 160,000 RMB, funding allocated in 2018: 80,000 RMB)
- Alice Hughes, Impacts of climate change on biodiversity and adaptation strategies, CAS Strategic Pilot Science and Technology Special (Class A), 1.5 million RMB (total allocated: 1,500,000 RMB, funding allocated in 2018: 148,000 RMB), 2018/1/1-2022/12/30
- Tuanjit Sritongchuay, Impact of backyard landscape and agricultural management on pollinator communication and pollination services in southern China and Thailand, The 63rd China Postdoctoral Science Foundation General Project, 50,000 RMB (total allocated: 50,000 RMB, funding allocated in 2018: 50,000 RMB), 2018/5-2019/4
- Youxin Ma, Canopy Science Research Platform: Phase 2 (purchase equipment), CAS fund, 497,000 RMB (total allocated: 497,000 RMB, funding allocated in 2018: 497,000 RMB), 2018
- Yang Bai, Evaluation of ecosystem service function in Taihu Lake Basin, Horizontal Fund of Nanjing Lake Institute of CAS, 40,000 RMB (total allocated: 40,000 RMB, funding allocated in 2018: 40,000 RMB), 2018





## Macroevolution Group

**PI: Harald Schneider**



**Harald Schneider**

Ph.D., Professor

Major research directions: Evolution of land plants with a focus on seed-free land plants, in particular ferns and liverworts.

The research of the Macroevolution Group covers a wide range of topics concerning the past and future of plant diversity explored by employing a macroevolutionary perspective. The research objectives range from (1) documenting the history of the accumulation of biodiversity, (2) uncovering the mechanism shaping the response of lineages to changing environments especially what defines the evolvability of plant lineages, and (3) predicting the future of the tree-of-life in a world increasingly shaped by humanity (Anthropocene). The research vision involves the perspective to apply phylogenetic research not only in the documentation of the past but also as a tool to manage the conservation of biodiversity resources.



**Hongmei Liu**

Ph.D., Honorary Research Associate

Research interests: fern biology, especially for the conservation of rare and endangered ferns occurring in Southeast Yunnan and adjacent regions by integrating phylogenetic research and horticultural practices.



**Postdocs:** Lucie Anais Bauret, Tao Fujiwara, Phyo Kay Kine

**Master student:** Ke Chen

**Group assistants:** Mengqi Zhang, Zhenlong Liang, Ting Shen

## Publications in 2018:

- Morris, J.L., Puttick, M.N., Clark, J.W., Edwards, D., Kenrick, P., Pressel, S., Wellman, C.H., Yang, Z.H., **Schneider, H.**, Donoghue, P.C.J.\* (2018) The timescale of early land plant evolution. *Proceedings of the National Academy of Science USA* 115(10): E2274-E2282.
- Morris, J.L., Puttick, M.N., Clark, J.W., Edwards, D., Kenrick, P., Pressel, S., Wellman, C.H., Yang, Z.H., **Schneider, H.\***, Donoghue, P.C.J. (2018) Reply to Hedges et al. Accurate time trees do indeed require accurate calibrations. *Proceedings of the National Academy of Science USA* 115(41): E9512-E9513.
- Puttick, M.N., Morris, J.L., Williams, T.A., Cox, C.J., Edwards, D., Kenrick, P., Pressel, S., Wellman, C.H., **Schneider, H.\***, Pisani, D.\* , Donoghue, P.C.J.\* (2018) The interrelationships of land plants and the nature of the ancestral embryophyte. *Current Biology* 28(5): 733-745.
- Barba-Montoya, J., Reis, M.D., **Schneider, H.**, Donoghue, P.C.J.\*, Yang, Z.H.\* (2018) Constraining uncertainty in the timescale of angiosperm evolution and the veracity of a cretaceous terrestrial revolution. *New Phytologist* 218(2): 819-834.
- Sousa, F.D, Foster, P.G., Donoghue, P.C.J., **Schneider, H.**, Cox, C.J.\* (2018) Nuclear protein phylogenies support the monopoly of the three bryophyte groups (Bryophyta Schimp.). *New Phytologist* doi: 10.1111/nph.15587
- Regalado, L.\* , Loriga, J., Bechteler, J., Beck, A., **Schneider, H.**, Heinrichs, J. (2018) Phylogenetic biogeography reveals the thing and source areas of the *Adiantum* species (Pteridaceae) in the West Indies, with a special focus on Cuba. *Journal of Biogeography* 45(3): 541-551.
- He, L.J., **Schneider, H.**, Hovenkamp, P., Marquardt, J., Wei, R., Wei, X.P., Zhang, X.C., Xiang, Q.P.\* (2018) A molecular phylogeny of selligieoid ferns (Polypodiaceae): implications for a natural delimitation despite homoplasy and rapid radiation. *Taxon* 67(2): 237-249.
- Chang, Y.F.\***, Ebihara, A., Lu, S.G., Liu, H.M., **Schneider, H.** (2018) Integrated taxonomy of the *Asplenium normale* complex (Aspleniaceae) in China and adjacent areas. *Journal of Plant Research* 131(4): 573-587.
- Liu, H.M, Russell, S.R., Vogel, J., **Schneider, H.\*** (2018) Inferring the potential of plastid DNA-based identification of derived ferns: a case study on the *Asplenium trichomanes* aggregate in Europe. *Plant Systematics and Evolution* 304(8): 1009-1022.
- Chang, Y.F., Hori, K., Murakami, N., Cao, L.M., Lu, S.G., **Schneider, H.** (2018) Validation of *Hymenasplenium laterrepens* (Aspleniaceae): evidence from morphology and molecular analyses. *Phytotaxa* 374 (4): 277-290.
- Bauret, L.\***, Field, A.R.\* , Gaudeul, M., Selosse, M.-A., Rouhan, G. (2018) First insights on the biogeographical history of *Phlegmariurus* (Lycopodiaceae), with a focus on Madagascar. *Molecular phylogenetics and evolution* 127: 488-501.
- Rakotondrainibe, F., Jouy, A., Rouhan, G., **Bauret L.**, Parris, B. S. (2018) Nouveautés taxonomiques et nomenclaturales chez les fougères grammitides (Pteridophyta, Polypodiaceae, Grammitidoideae) de Madagascar. *Adansonia* 40 (2): 141-162.

## Projects:

Harald Schneider, Practical Application of Macroscopic Evolution Theory: Carrying out the Protection of Plant Diversity in Yunnan with Natural Plant Resources as the Core, Yunling Talents Program - Yunling High Level

Talents Special Project, 7 million RMB (total allocated: 7,000,000 RMB, funding allocated in 2018: 0 RMB), 2018/1-2022/12

Harald Schneider, Comprehensive conservation biology research under the guidance of macroevolution theory, National "Thousand Talents Program" Foreign Project (Long-term Project), 5 million RMB (total allocated: 5,000,000 RMB, funding allocated in 2018: 0 RMB), 2018/3-2021/3

Lucie Bauret, Evolution of fern diversity in karst areas of Southeast Asia, Postdoctor Project of XTBG, CAS, 150,000 RMB (total allocated: 150,000 RMB, funding allocated in 2018: 150,000 RMB), 2018/03-2020/03

Tao Fujiwara, The role of polyploidy in the diversity of ferns, Postdoctor Project of XTBG, CAS, 150,000 RMB (total allocated: 150,000 RMB, funding allocated in 2018: 150,000 RMB), 2018/03-2020/03

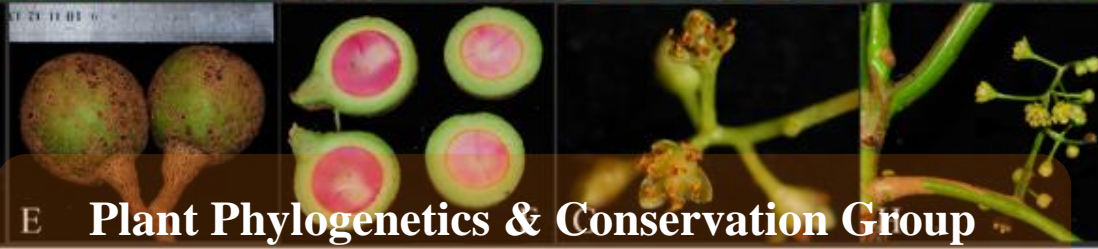
Phyo Kay Kine, Comparison of fern and Lycophytes biodiversity in Shan-Thai and Indo-China, especially Myanmar, from a phylogenetic perspective, Postdoctor Project of XTBG, 150,000 RMB (total allocated: 150,000 RMB, funding allocated in 2018: 150,000 RMB), 2018/03-2020/03

Lucie Bauret, Introduction project of "Post-doctoral International Exchange Program" in 2018, National post-doctoral International Exchange Program, 600,000 RMB (total allocated: 0 RMB, funding allocated in 2018: 0 RMB), 2018/03/22 -2020/03/21

Lucie Bauret, Post-doctoral orientation training in Yunnan Province in 2018, 160,000 RMB (total allocated: 160,000 RMB, funding allocated in 2018: 0 RMB)

Tao Fujiwara, Post-doctoral orientation training in Yunnan Province in 2018, 160,000 RMB (total allocated: 160,000 RMB, funding allocated in 2018: 0 RMB)

Phyo Kay Kine, Post-doctoral orientation training in Yunnan Province in 2018, 160,000 RMB (total allocated: 0 RMB, funding allocated in 2018: 160,000 RMB)



## E Plant Phylogenetics & Conservation Group

PI: Jie Li

**Jie Li**  
Ph.D., Professor  
Focus on plant phylogeny, biogeography and conservation biology.

The group was established in 2001. The research focuses on reconstructing the phylogenetic structure of the basic plants taxa, reconstructing the phylogenetic system under different habitats using plant DNA barcodes, constructing plant pedigrees by means of second-generation sequencing, explaining some questions related to biogeography, evaluating the genetic diversity of endangered species, and the relationship between plant functional traits and genetics. The study is focused on Lauraceae taxa, but also part of the herbaceous plants such as *Rabdosia amethystoides* and *Chromolaena odorata*.



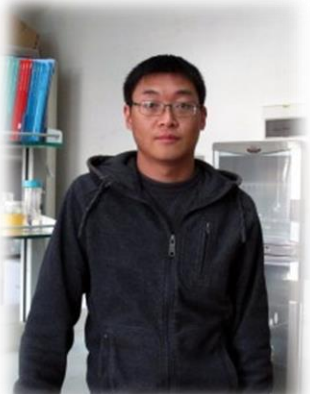
**Xiuqin Ci**  
Ph.D., Experimentalist  
Focus on: barcode, community phylogeny and conservation genetics studies on endangered species of Lauraceae.



**Hui Ma**  
Ph.D., Assistant Researcher  
Focus on: transcriptomes, genome-wide molecular phylogeny and molecular evolution studies.



**Honghu Meng**  
Ph.D., Assistant Researcher  
Focus on: plant evolution, biogeography research.



**Lang Li**  
Ph.D., Assistant researcher  
Focus on: phylogeny and biogeography and other fields of research.

**PhD students:**  
Jianhua Xiao; Zhifang Liu; Chaonan Cai; Shuli Wang

**Master students:**  
Canyu Zhang; Xiaoyan Zhang; Jianlin Hu

### Publications in 2018:

- Meng, H.H.<sup>†</sup>, Zhou, S.S.<sup>†</sup>, Li, L., Tan, Y.H., Li, J.W., Li, J.\* (2018) Conflict between biodiversity conservation and economic growth: Insight into rare plants in tropical China. *Biodiversity and Conservation* (Accepted on 09 Nov 2018)
- Wang, S.L., Li, L., Ci, X.Q., Conran, G.J., Li, J.\* (2018) Taxonomic status and disjunction of *Mirabilis himalaica* (Nyctaginaceae). *Journal of Systematics and Evolution* (Accepted on 17 Oct 018)  
<https://doi.org/10.1111/jse.12466>
- Ding, X., Xiao, J.H., Li, L., Conran, G.J., Li, J.\* (2018) Consistent and robust delimitation of two controversial gold-thread nanmu tree species based on morphological and RADseq data. *Journal of Systematics and Evolution* (Accepted on 01 May 2018) <https://doi.org/10.1111/jse.12433>
- Li Jie, 2018. Lauraceae. In: Li De-zhu (ed.), A dictionary of the families and genera of Chinese vascular plants. Science Press, Beijing

### Projects:

- Jie Li, Study on the Phylogenetic Diversity of Tropical Forest Community Based on DNA Barcoding from Evolutionary Dimension, General Program, 780,000 RMB (total allocated: 422,500 RMB, funding allocated in 2018: 32,500 RMB), 2017/10/1-2021/12/31
- Jie Li, Study on the DNA Barcoding of Tropical Important Wood Species and Extreme Endangered Orchid Plants, CAS Fund, 500,000 RMB (total allocated: 500,000 RMB, funding allocated in 2018: 250,000 RMB), 2017/1/1-2018/12/31
- Jie Li, Survey and Germplasm Collection of Extremely Small Population Wild Plants in Southwestern Yunnan Province, Ministry of S&T, 2,560,000 RMB (total allocated: 1,560,000 RMB, funding allocated in 2018: 780,000 RMB), 2017/2/1-2022/1/31
- Hui Ma, Study on the horizontal gene transfer between the rootless parasitic plants of Lauraceae and different host plants, Youth Fund, 240,000 RMB (total allocated: 240,000 RMB, funding allocated in 2018: 13,600 RMB), 2017/2/1-2022/1/31
- Xiuqin Ci, Evaluation of phylogenetic diversity of tropical forests in Xishuangbanna using database of DNA barcodes, Youth Fund, 240,000 RMB (total allocated: 240,000 RMB, funding allocated in 2018: 13,600 RMB), 2016/1/1-2018/12/31
- Honghu Meng, Geographical Distribution Pattern of *Engelhardtia roxburghiana* and Its Response Mechanism to Climate Change, Youth Fund, 312,000 RMB (total allocated: 173,100 RMB, funding allocated in 2018: 17,100 RMB), 2017/10/1-2020/12/31
- Hui Ma, Western Young Scholar B, CAS Fund, 150,000 RMB (total allocated: 150,000 RMB, funding allocated in 2018: 50,000 RMB), 2016/1/1-2018/12/31
- Honghu Meng, Western Young Scholar B, CAS Fund, 150,000 RMB (total allocated: 100,000 RMB, funding allocated in 2018: 50,000 RMB), 2017/1/1-2020/12/31
- Lang Li, Wild Resource Investigation and Phylogeny of “*Phoebe Zhennan*” tree species, Local Natural Science Foundation, 100,000 RMB (total allocated: 100,000 RMB, funding allocated in 2018: 50,000 RMB), 2017/6/1-2020/5/31
- Honghu Meng, Youth Innovation Promotion Association, CAS Fund, 800,000 RMB (total allocated: 200,000 RMB, funding allocated in 2018: 200,000 RMB), 2018/01/01-2021/12/31
- Honghu Meng, Study on the Spatial Molecular Mechanism of the Tropical and Subtropical Plant *Engelhardtia roxburghiana*, Local natural Fund, 100,000 RMB (total allocated: 100,000 RMB, funding allocated in 2018: 100,000 RMB), 2018/06/01-2021/05/31



## Plant Diversity and Conservation Group

**PI: Yunhong Tan**

**Yunhong Tan**

Associate Professor

Research interests: floristics, taxonomy, systematics of tropical plant.

The Plant Diversity and Conservation Group's major research interests are tropical plant diversity and conservation studies in Southeast Asia, especially the flora composition features, phylogenetic and geographic distribution patterns and mechanisms of diverse tropical plants in Myanmar. We have a project on floristic inventory research of the Flora of Myanmar, especially parts of Upper Myanmar. We are interested in the taxonomy and systematic study of several taxa of tropical vascular plants in Southeast Asia, such as Lauraceae, Annonaceae, Euphorbiaceae, Zingiberaceae, Begoniaceae, Myristicaceae, Meliaceae, Rubiaceae, Primulaceae, and Piperaceae.



**Bin Yang**, Research Assistant

Research on: plant taxonomy.



**Nan Jiang**, PhD, Engineer

Research on: plant taxonomy.



**Group assistants:**



**Hongbo Ding**



**Xiaodong Zeng**



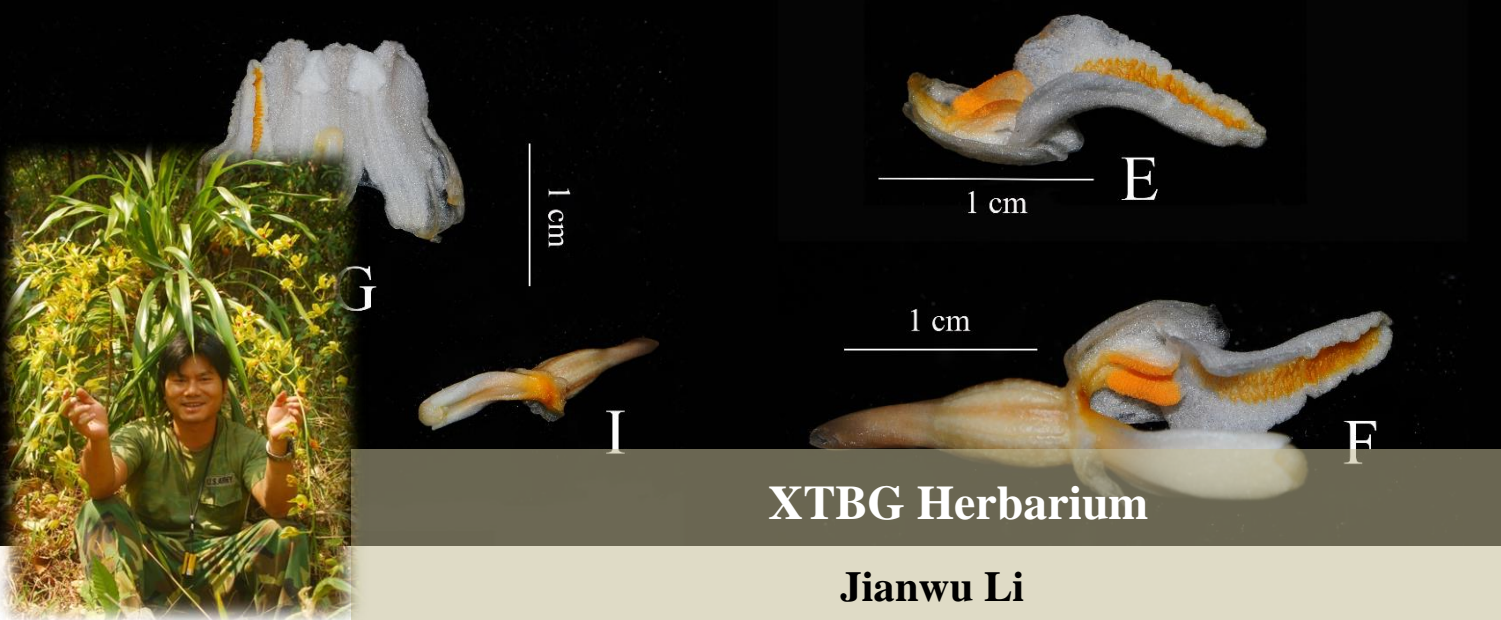
**Mya Bhone Maw**

### Publications in 2018:

- Yang, B.**, Ding, H.B., Li, Z.H., **Tan, Y.H.\*** (2018) *Primula zhui* (Primulaceae) sp. nov. from south Yunnan, southwest China. *Nordic Journal of Botany* 35: 681-686.
- Yang, B.**, **Zhou, S.S.**, Ding, H.B., **Li, R.**, Maung, K.W., **Tan, Y.H.\*** (2018) Two new species of *Trivalvaria* (Annonaceae) from northern Myanmar. *PhytoKeys* 94: 3-12.
- Yang, B.**, Ding, H.B., **Zhou, S.S.**, Zhu, X.X., **Li, R.**, Maw, M.B., **Tan, Y.H.\*** (2018) *Aristolochia sinoburmanica* (Aristolochiaceae), a new species from north Myanmar. *PhytoKeys* 94: 13-22.
- Ding, H.B., **Yang, B.**, **Zhou, S.S.**, **Li, R.**, Maw, M.B., Maung, K.W., **Tan, Y.H.\*** (2018) *Hedychium putaense* (Zingiberaceae), a new species from Putao, Kachin State, Northern Myanmar. *PhytoKeys* 94:51-57.
- Tan, Y.H.**, Li, D.R., **Zhou, S.S.**, Chen, Y.J., Bramley, G.L.C., Li, B.\* (2018) *Premna grandipaniculata* (Lamiaceae, Premnoideae), a remarkable new species from north Myanmar. *PhytoKeys* 94: 117-123.
- Liu, Q., **Zhou, S.S.**, Jin, X.H., **Pan, B.**, Maung, K.W., Zyaw, M., **Li, R.**, **Quan, R.C.**, **Tan, Y.H.\*** (2018) *Dendrobium naungmungense* (Orchidaceae, Dendrobieae), a new species from Kachin State, Myanmar. *PhytoKeys* 94: 31–38.
- Xue, B.\* , **Tan, Y.H.\***, Thomas, D.C., Chaowasku, T., Hou, X.L., Saunders, R.M.K. (2018) A new Annonaceae genus, *Wuodendron*, provides support for a post-boreotropical origin of the Asian-Neotropical disjunction in the tribe Miliuseae. *Taxon* 67(2): 250-266.
- Yang, B.**, Ding, H.B., **Li, J.W.**, **Tan, Y.H.\*** (2018) Two new species of *Hiptage* (Malpighiaceae) from Yunnan, Southwest of China. *PhytoKeys* 110:81-89.

### Projects:

- Yunhong Tan, Investigation and study on the diversity of vascular plants in northern Myanmar, International Cooperation Project (SEABRI Funding), 1 million RMB (total allocated: 550,000 RMB, funding allocated in 2018: 550,000 RMB), 2016/3/29-2019/12/31



**Jianwu Li**

Senior Engineer

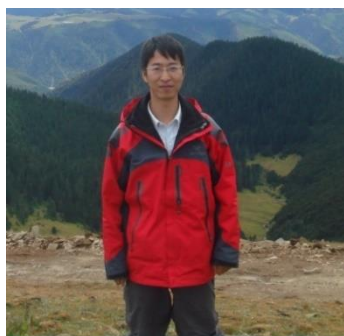
Research interests: Tropical plant taxonomy, especially for family Orchidaceae.



**Hua Zhu**

PhD, Professor

Focus on tropical rain forest biodiversity conservation research, vegetation and flora geography.



**Li Wang**

Senior Engineer

Research interests: Gymnosperm fossils, Poaceae (Bambusoideae) taxonomy.

The Specimens and Germplasm Conservation Center consists of the XTBG Herbarium (HITBC) and the Tropical Plant Germplasm Resource Bank, which is one of the important support systems of XTBG. The XTBG Herbarium (HITBC) collects the vascular flora specimens with distribution ranges centered in tropical region of southern Yunnan, and extends to the subtropical regions of Yunnan and Southeast Asia. It also holds voucher specimens for ecological plot studies and seed specimens, and provides technical support services for discipline development in XTBG and technical services for local forestry, environmental protection, gardens and scientific popularization, etc.

Now we have deposited 219,952 sheets of specimens, including 757 sheets of Type specimens and 52,576 sheets of duplicate specimens.

As the important support system of XTBG, in 2018 we identified 46 sheets of specimens for research groups or graduate students; provided field survey support to 16 plots in areas planned to be destroyed by highway construction in southern Yunnan; and helped SEABRI with field work in Myanmar 3 times. We also supported 23 researchers or students studying specimens and received 418510 network clicks from CVH. We identified 9 specimens for Mengla Customs and provided field support 9 times for the Department of Forests, Xishuangbanna Dai Autonomous Prefecture.



**Jiantao Yin**

Senior Experimentalist

Research interests: plant taxonomy.



**Shishun Zhou**

Engineer

Research interests: tropical plant taxonomy and forest community research.



## Publications in 2018:

- Li, J.W.\*, Tan, Y.H.\*, Wang, X.L.\*, Wang, C.W., Jin, X.H. (2018) *Begonia medogensis*, a new species of Begoniaceae from Western China and Northern Myanmar. *PhytoKeys* 103: 13-18.
- Li, J.W., Huang, L.Q., Li, G.W., Pan, B., Yin, J.T., Jin, X.H.\* (2018) Lectotype, epitype and amendment of *Gastrodia angusta* (Orchidaceae). *Phytotaxa* 356(4): 291-296.
- Zhou, S.S., Tan, Y.H., Li, R., Quan, R.C., Maung, K.W., Liu, Q.\*, SiMa YK\*(2018) *Magnolia kachinensis* (Magnoliaceae), a new species from northern Myanmar. *Phytotaxa* 375(1): 92-98.
- Zhou, S.S., Tan, Y.H., Jin, X.H., Maung, K.W., Zyaw, M., Li, R., Quan, R.C., Liu, Q.\* (2018) *Coelogyne victoria-reginae* (Orchidaceae, Epidendroideae, Arethuseae), a new species from Chin State, Myanmar. *PhytoKeys* 98: 125-133.
- Li, J.D., Wang, F. & Li, J.W.\* (2018). *Bulbophyllum sarcophylloides*, a new record of Orchidaceae from China. *Journal of Tropical and Subtropical Botany*. 26(5): 538-540. [李建东, 王芳, 李剑武\*. (2018) 厚叶卷瓣兰, 中国兰科一新记录种. *热带亚热带植物学报*, 26 (5): 538-540.]
- Ma, C.C., Ye, D.P., Yang, G.P. & Li, J.W.\* (2018). *Bulbophyllum pinicola* (Orchidaceae), a newly recorded species in China. *Guihaia*. 38(3): 408-410. [马丛昌, 叶德平, 杨国平, 李剑武\* (2018) 无量山石豆兰, 中国兰科一新记录种. *广西植物*, 38 (3): 408-410.]
- Wang, X.L., Li, J.W., Wang, C.W. & Jin, X.H. (2018). New information of orchids in Tibet, China. *Guihaia*. 38 (11): 1440-1445. [王喜龙, 李剑武, 王和旺, 金效华 (2018) 中国西藏兰科植物新资料. *广西植物*, 38 (3): 1140-1145.]
- Zhu, H. (2018) A sketch for classification of tropical forest vegetation in Yunnan. *Guihaia*. 38(8): 984-1004. [朱华. (2018). 云南热带森林植被分类纲要. *广西植物* 38(8): 984-1004.]
- Zhu, H. (2018). Origin and evolution of the flora of Yunnan. *Plant Science Journal*. 36(1): 32-37. [朱华. (2018). 云南植物区系的起源与演化. *植物科学学报* 36(1): 32-37.]
- Zhu, H. (2018) The “Tanaka Line” and its application as a biogeographic floristic line. *Plant Science Journal*. 36(5): 761-766. [朱华. (2018) “田中线”及其在生物地理上的运用问题. *植物科学学报* 36 (5): 761-766.]

## Projects:

- Jianwu Li, Cultivation and Management of *Platanthera* in Asia, General Program, 50,000 RMB (total allocated: 50,000 RMB, funding allocated in 2018: 0 RMB), 2017/1/1-2019/12/31
- Hua Zhu, Study on Vegetation Geography in Yunnan Province, General Program, 800,000 RMB (total allocated: 800,000 RMB, funding allocated in 2018: 0 RMB), 2015/1/1-2018/12/31
- Yanfen Chang, Study on the Classification of ferns in Xishuangbanna and tropical regions around, CAS Fund, 220,000 RMB (total allocated: 220,000 RMB, funding allocated in 2018: 110,000 RMB), 2017/1/1-2019/12/31
- Shishun Zhou, Investigation and Study on Forest Vegetation in Victoria Mountain in Western Myanmar, International Cooperation-on Project, 200,000 RMB (total allocated: 200,000 RMB, funding allocated in 2018: 200,000 RMB), 2017/1/1-2019/12/31
- Jianwu Li, 2018 Annual Operational Grants Project of the Special Biological Specimen Museum (Museum) of the Strategic Bio-resources Support System of the Chinese Academy of Sciences, Ministry of finance, 200,000 RMB (total allocated: 200,000 RMB, funding allocated in 2018: 200,000 RMB)

# Seed Bank

Bin Wen



## Bin Wen

PhD, Professor

Research Focus on the development, dormancy, germination and storage of tropical plant seeds, including ultra-low temperature preservation, recalcitrant seeds, and tropical weeds and invasive plant seeds.

The Tropical Plant Germplasm Resource Bank collects, evaluates, preserves and distributes tropical and subtropical important plant resources, especially rare and endangered endemic plant germplasm resources. The Bank studies important theoretical issues of plant germplasm conservation; pioneers the high-tech methods for long-term preservation of plant germplasm resources; and it is open to scientific research institutions and researchers in China and abroad to provide a technical platform and laboratory equipment for carrying out plant germplasm preservation, seed physiological ecology, and seed molecular biology research. The Bank also trains and cultivates senior professionals engaged in the plant *ex situ* conservation research and practice.



## Qinying Lan

Senior Engineer

Focus on recalcitrant seed biology and *in-vitro* conservation research.



## Fangfang Xu

PhD, Assistant Professor

Focus on seed collection and germination.



## Xuli Fan

PhD, Assistant Professor

Focus on reproductive ecology, seed preservation, morphology, and germination research of Orchidaceae.

## Master students:

Xin Gao; Peiru Yang

## Assistants:

Xuejing Yin; Chunmei Pu; Yukun Fan

### **Publications in 2018:**

- Lan, Q.Y.**, Yin, S.H., He, H.Y., **Tan, T.H.**, Liu, Q., Xia, Y.M., **Wen, B.**, Baskin, C.C.\*, Baskin, J.M. (2018) Seed dormancy-life form profile for 358 species from the Xishuangbanna seasonal tropical rainforest, Yunnan Province, China compared to world database. *Scientific Reports* 8:4674.
- Yuan, X.**, **Wen, B.\*** (2018) Seed germination response to high temperature and water stress in three invasive Asteraceae weeds from Xishuangbanna, SW China. *PLoS ONE* 13(1): e0191710.
- Xue, P.**, **Wen, B.\*** (2018) Desiccation tolerance of intermediate pomelo (*Citrus maxima* 'Mansailong') seeds following rapid and slow drying. *Seed Science and Technology* 46:511-519

### **Projects:**

- Bin Wen, National Important Wild Germplasm Resources Shared Platform, National S&T infrastructure platform construction, 700,000 RMB (total allocated: 1,000,000 RMB, funding allocated in 2018: 300,000 RMB), 2017/10/10-2020/12/31
- Fangfang Xu, Relationship between extrafloral nectary secretion and plant sugar transport and contribution of extrafloral nectary to plant defense, Youth Fund, 264,000 RMB (total allocated: 145,100 RMB, funding allocated in 2018: 13,100 RMB), 2017/10/1-2020/12/31
- Qinying Lan, The evolution and extinction of several plant groups and their responses to the Asian monsoon climate, National Fund Key Project Sub-topic, 200,000 RMB (total allocated: 150,000 RMB, funding allocated in 2018: 50,000 RMB), 2016/1/1-2019/12/31





*Magnolia kachinensis*



**Center for Integrative Conservation  
Xishuangbanna Tropical Botanical Garden  
Chinese Academy of Sciences**

**<http://cic.xtbg.ac.cn/>**