Living Forests

A newsletter for biodiversity conservation in South China

(Issue No. 2)

KFBG
Kadoorie Farm & Botanic Garden
嘉道理農場暨植物園

森林脉搏

华南生物多样性保育通信刊物

（第二期）

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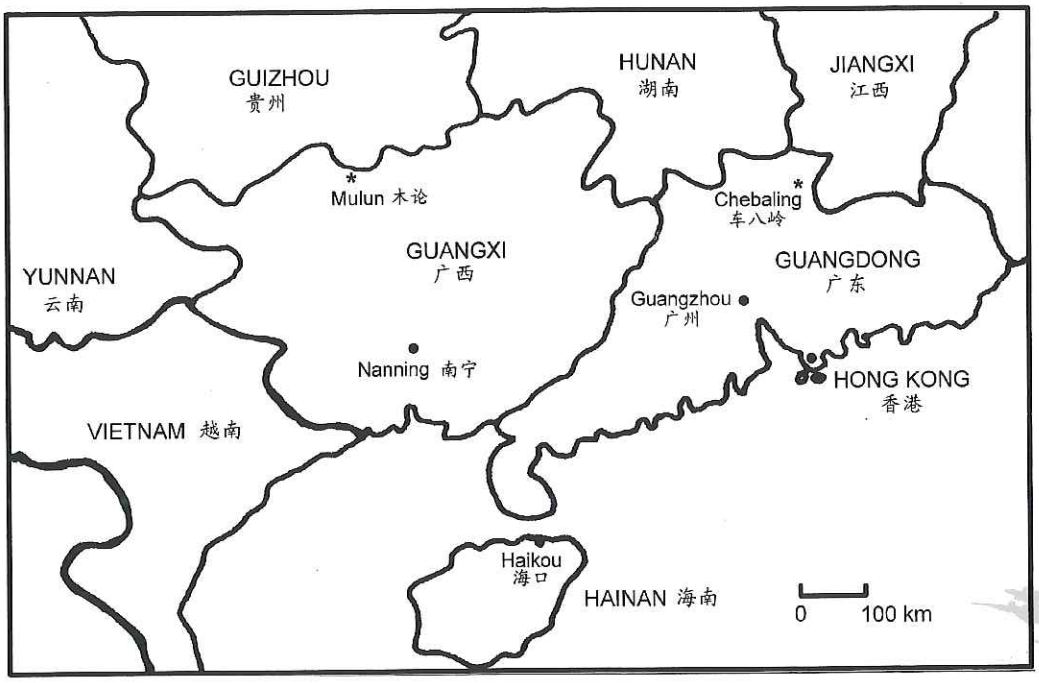

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亚洲龟类危机

刘惠宁 / 香港嘉道理农場暨植物园
区慧玲翻译

亚洲有超过九十种陆龟及淡水龟，占全球龟类三分之一。这些亚洲龟类长期被作为食用及药用，也有一些被当宠物饲养。中国最近的经济改革使国内，尤其是华南地区，对野生生物的食用需求量不断上升，而龟类亦包括在内。随著中国及邻近国家的边境开放及中国货币流通，龟类的国际贸易更方便。由于人工饲养水鱼(*Pelodiscus sinensis*)只占市场需求量其中一部份，在南亚、东亚及东南亚等野外地区捕捉的龟则占其余大部份。有部份亚洲龟类也被售作宠物用途，尤其一些稀有而别具价值的龟，在欧洲、美国及日本等发达国家的需求甚殷。在过去三十年里，中国食品市场的龟由中国物种占大多数转至以南亚及东南亚物种作主导，证明了无止境的滥捕是不可持续下去的。正因为龟长寿、迟熟、繁殖率低，而且龟蛋及幼体死亡率高;大量捕猎将令龟类数量大大削减，种群就算能恢复过来，也须经一段漫长岁月。现时几乎所有中国的龟都属濒危和易危;可惜很多东南亚及南亚的龟种亦不能逃过这宿命。

有见及此，野生物保护协会(WCS)、野生物贸易研究委员会(TRAFFIC)及世界自然基金会(WWF)在一九九九年十二月初于柬埔寨金边联合举办了一个亚洲淡水龟及陆龟保育和贸易工作坊。来自十六个国家的四十多位龟类专家、政府代表、国际保育组织及中医师齐集(其中包括海南师范学院史海涛教授及嘉道理农场暨植物园职员)，讨论有关龟类贸易的本质和影响，及拟出解决其威胁的方法。从报告中得知，几乎所有的亚洲龟类也作贸易用途，另一令人忧虑的趋势是商人去到更远的地方开发龟类资源，原因是一个地点的龟类被「开发」数年后，便差不多耗尽，商人须另择地点进行捕猎及输出的操作。与会者根据世界自然保护联盟红色名录(IUCN Red List)的标准评估八十四种龟，当中的六十三种被列为受威胁的，其中大部份(过八成)的受危成因包括贸易(是因贸易而受危的)。我们需要一套全面的策略去对付每年过百万龟类被捕猎的威胁，包括制订完善的法律并切实执行、收集贸易数据及生物资料，以及将需求量减低至可持续利用的程度。如欲获得有关工作坊议定的总结内容，可到以下网址浏览: www.nytts.org/asia/trade-ws.htm 。工作坊的会议记录快将出版，部份费用由本园资助。

由于华南地区的龟类长久以来遭人捕猎及食用，它们已差不多绝迹于野外。在华南生物多样性保育计划的三年野外调查中，本园的华南生物多样性研究队到过广西、海南及广东大部份最好的林区，却只发现三种共七只龟，包括:平胸龟(*Platysternon megacephalum*)、地龟(*Geoemyda spengleri*)及四眼斑水龟(*Sacalia quadriocellata*)在福建、广东、广西、海南至越南，甚至可能在寮国的森林山涧一带出没的金钱龟(*Cuora trifasciata*)却未有发现。金钱龟被认为具治癌及其他医疗作用，故成为捕猎对象。此外，市场对金钱龟求过于供，一只大的成年金钱龟售价高达一万元港币(约一万一千元人民币或一千三百美元)。这物种在其绝大部份的分布范围可能经已生态灭绝，而保存得最好的种群应在香港。就算香港的金钱龟种群也受非法捕猎所威胁，本园正跟香港渔农自然护理处合作，拟订策略及方案去保护这物种。

亚洲龟类多样性甚高，更遍布不同的栖息地:包括沙漠、雨林、水田、红树林、陡峭山涧及宽阔的江河。它们有些只以植物作为食粮，有些只吃肉也有些是杂食的。可惜，在我们未能真正掌握其生态角色之前，它们已消声匿迹了。其实，龟在亚洲文化上担当著一个重要角色;在中国神话里，龟也是四大神兽，亦象征长寿。龟是珍贵的天然资源，长久以来便被人们作食用及医药用。近年的商业贸易及对其栖息地的破坏正威胁亚洲所有的龟种。如果我们未能及时遏止这趋势，龟这种源远流长且具独特进化史的动物将会消失于亚洲人所接触的大自然中。长寿的象征可能变成灭绝的标志。

The Asian Turtles Crisis

by Michael LAU
Kadoorie Farm & Botanic Garden

Over 90 species of tortoises and freshwater turtles occur in Asia, constituting more than one third of the world turtle fauna. Many of these Asian turtles have long been used by the people as food, medicine, and to a lesser extent, pets. The recent economic reforms in China have resulted in an ever increasing demand, especially in the South, for wildlife including turtles for consumption. The opening up of borders between China and the neighbouring countries, and the Chinese currency becoming convertible, made international trade of turtles possible. Although part of the demand is met by farmed Chinese Softshell Turtles, *Pelodiscus sinensis*, the bulk of this trade involves wild-caught turtles from South, East and Southeast Asia. A smaller number of Asian turtles are also traded as pets. Rare species with high individual value are often sought to satisfy the demand for pets in developed countries in Europe, US and Japan. This uncontrolled exploitation of turtles is clearly unsustainable, as witnessed by the change in species composition in Chinese food markets from predominantly Chinese species to mostly South Asian and Southeast Asian species in the last 30 years. This is because turtles are long-lived and slow-maturing, with relatively low reproductive rate and high mortality of eggs and juveniles. Once depleted, turtle populations take a very long time to recover, if they can at all. Nearly all Chinese turtles have become endangered or threatened and many Southeast and South Asian species are facing the same fate.

As a result, a Workshop on the Conservation and Trade in Freshwater Turtles and Tortoises in Asia was organized by the Wildlife Conservation Society (WCS), Trade Records Analysis of Flora and Fauna In Commerce (TRAFFIC) and World Wildlife Fund (WWF) in Phnom Penh, Cambodia in early December, 1999. Over 40 turtle experts, government representatives, international conservation organizations and traditional medicine practitioners from 16 countries (including Prof. Shi Haitao from Hainan Teachers College and staff from Kadoorie Farm & Botanic Garden) discussed the nature and impact of the turtle trade, and explored measures to counter this threat. The turtle trade is indiscriminate in that nearly all Asian species are involved. Another worrying trend is that turtles are being collected from new, more distant source areas. Often, turtles in any one location become depleted in a few years and the whole operation of collection and export has to move to a new site. Of the 84 species being evaluated for their conservation status, the workshop participants recommended that 63 species should be considered as threatened following the IUCN Red List criteria. Trade was a contributing factor in the majority (over 80 %) of these species. In order to address this threat which involves the removal of millions of turtles from the wild each year, a comprehensive strategy is needed which should include better legal protection and enforcement, collection of trade data and biological information, and reduction of demand to sustainable levels. A detailed account of the workshop conclusions can now be viewed on the web site: <http://www.nytts.org/asia/trade-ws.htm>. Proceedings of the workshop will also be out in the near future, funded partly by KFBG.

The long history of collecting and consuming turtles in South China has resulted in the near complete disappearance of turtles in the wild. During three years of field surveys under KFBG's South China Biodiversity Conservation Programme, covering most of the best forested areas in Guangxi, Hainan and Guangdong, we have only managed to find seven individuals of three species: Big-headed Turtle

Platysternon megacephalum, Black-breasted Leaf Turtle *Geoemyda spengleri*, and Four-eyed Turtle *Sacalia quadriocellata* in the wild. One species conspicuous in its absence is the Three-banded Box Turtle or Golden Coin Turtle *Cuora trifasciata,* which ranges in forested hill streams from Fujian, Guangdong, Guangxi, Hainan to Vietnam and possibly Laos. This species is believed to have cancer-curing and other medicinal properties and is particularly targeted. Due to the increasing demand and a declining supply, the price has rocketed to about HK$ 10,000 (RMB 11,000 or US$ 1,300) for a large adult. This species is probably ecologically extinct throughout much of its range and the healthiest population known is in Hong Kong. Even this population is under threat from illegal trapping and Kadoorie Farm & Botanic Garden is now working with Hong Kong Agriculture, Fisheries and Conservation Department towards a strategy and action plan to safeguard this species.

Asia has a very diverse turtle fauna occupying many different habitats from desert to rainforest, from wet field to mangrove swamp and from steep hill stream to big lowland river. Some of them feed solely on plant matter, some are strictly carnivorous while others are omnivorous. Unfortunately, they are disappearing before their ecological role can be studied properly. Turtles also play an important role in Asian culture. According to Chinese mythology, the turtle is one of the four devine animals and is also the symbol of longevity. They are also a valuable natural resource that has long been utilized for sustenance and as medicine. The commercial trade, together with habitat destruction and degradation, is now threatening the survival of the whole group in Asia. If we cannot reverse the trend soon, the Nature that Asian people experience may be forever devoid of these unique animals with their ancient and distinct evolutionary history. The symbol of longevity may become a symbol of extinction.

在海口市场内的一个贩卖龟的摊档，当中大部份的龟都是来自东南亚地区 (李国诚摄)
A turtle stall in Haikou Market where most of the chelonians for sale were originated from Southeast Asia (by LEE Kwok Shing/KFBG)

芳踪沓然 - 海南虎班鹀

李国诚 林咏怡 / 香港嘉道理农場暨植物园

海南虎班鹀(*Gorsachius magnificus*)是中国特有种，一八九九年在海南岛中部首次被发现。到现在，中国境内仅在华东和华南的五个地点发现过，并仅有十几个记录。国外只有越南北部有一个旧记录。由于多年来没有记录，有些鸟类学家认为这种鸟已经灭绝，而世界自然保护联盟（IUCN）已将其列为极度濒危。

一九九八年五月，华南生物多样性研究队在南宁市一个市場内进行野生动物贸易调查时，发现一只海南虎班鹀幼鸟，并立即将它买下，在广西林业厅的允许下，交给广西大学的周放教授饲养；同年八月将它带到附近的大明山保护区放归大自然。

这一次发现，证明了该鸟至少仍有一个种群存在。研究队对此非常重视，并资助周放教授去调查该种鸟在广西的分布范围和状况。同时，在广东北部，也传出发现海南虎班鹀的消息。

今年三月和四月，研究队根据资料到广西和广东去寻找这种神秘的鸟，以了解它们的生态环境和生活习性，找出导致它们濒临灭绝的原因，以便制订保育计划。

三月二十九日至四月四日，研究队和世界自然保护联盟（IUCN）鹭鸟专家组组长哈费勒教授（Prof. Heinz Hafner）、广西大学的周放教授和广西林业厅的官员一行十多人，来到广西海南虎班鹀分布区内九个地点，包括保护区、风水林、林场、水库、农村附近的水田和鱼塘进行考察。期间研究队到过海南虎班鹀筑巢、觅食和一些可能有它们踪迹的地点。但因为繁殖季节尚未开始，所以在筑巢点只找到一些旧巢、羽毛和粪便。考察第二天的黄昏，其中两位队员在一处水田边等待的时候，一只海南虎班鹀从附近树林中飞出来，并在大约三十米外飞过，最后降落在附近的水田中。由于天色渐暗，未能观察到其觅食和活动的情况。虽然如此，这发现令所有队员都很振奋，因为这是近六十多年来，首次有非国内研究人员在野外观察到的记录。其后几天，我们到访了其他曾有记录的地点，但没有进一步发现。

四月六日，研究队离开广西，向另一个分布区—广东北部车八岭国家级自然保护区进发。香港米埔自然保护区的杨路年博士和广东林业厅一位官员也在此时加入。第二天早上，在保护区人员安排下，我们访问了一位于九九年夏天曾两次捕捉到海南虎班鹀的农民。当日下午，研究队根据资料分成三组坐在河边不同位置等候。大约七时，其中一位队员分别四次看到几只鹭鸟从林中飞出来，但因天色已黑且距离甚远，所以不能分辨是那一种。接著两天，所有队员都在该地点等候，而每晚七时都有两只鹭鸟从河的上游一先一后向下游飞去，这次可确定出其中一只是海南虎班鹀，还拍下了照片。

这十几天内，我们到过很多不同的生境，对海南虎班鹀作出了多方面的了解，发现它们严重受人骚扰，以致种群几近灭绝。在广西分布区，不论在保护区内外也有记录。在保护区外的地方，砍伐和打猎情况极为严重。海南虎班鹀有时会飞到村内的水田和鱼塘觅食，并在附近的树林筑巢。每年繁殖季节，村民都会到巢区打鸟和捡鸟蛋，令它们的数量不断下降。广西林业厅对此极为关注，并在去年将位于扶绥县的筑巢区定为全国第一个海南虎班鹀保护区；另一个将在今年成立。在广东的车八岭，它们生活在保护区内及其周围，有良好的树林和溪流的地方，但偶然也会飞到附近村落觅食。保护区成立后，村民的枪都被没收，所以偷猎并不严重，对海南虎班鹀没有太大威胁。另外，广东、广西的电视台和报章也不时报导有关海南虎班鹀的消息，帮助市民认识这种鸟，知道应如何去保护它们。

在短短两星期内，能先后几次观察到全球其中一种最稀有的鸟，并获得更详尽的资料，是我们跟广东、广西林业厅、广西大学的周放教授及鹭鸟专家组组长哈费勒教授合作的成果。本园受了IUCN的委托，现正制订一份保育计划以好好保护海南虎班鹀余下的种群和栖息地，令它们能继续繁衍下去。

A glimmer at sundown - White-eared Night Heron

by LEE Kwok Shing & Vicky LAM
Kadoorie Farm & Botanic Garden
Translated by Vera POON

The White-eared Night Heron(*Gorsachius magnificus*) is an endemic species in China, first reported in 1899 from the middle part of Hainan Island. Currently, only five places scattered in South and East China have yielded about 10 records. Outside China, only one old record was made, in North Vietnam. Since no record had been made for many years, some ornithologists reckoned that this species had become extinct. The World Conservation Union (IUCN) has listed it as a critically endangered species.

When the South China Biodiversity Team (SCBT) conducted a wildlife trade survey in a market in Nanning in May 1998, a juvenile White-eared Night Heron was discovered and bought immediately, after which Prof. Zhou Fang from Guangxi University raised the bird. It was released at the nearby Damingshan Nature Reserve in August of the same year with the help of the Guangxi Forestry Department.

This discovery proved that there was at least one population still existing in the world. KFBG highly valued this finding and subsidized Prof. Zhou Fang to survey the distribution and status of this bird in Guangxi. Meanwhile news of a White-eared Night Heron sighting was also heard from North Guangdong.

During March and April this year, SCBT visited Guangxi and Guangdong to look for this mysterious bird guided by the gathered data so as to learn more about its ecological environment and living habits. We hoped the factors leading to its endangerment could be clarified, in order to formulate conservation actions. From 29th March to 4th April, a group of around ten people including SCBT members, Prof. Heinz Hafner, chairman of the Heron Specialists Group of IUCN, Prof. Zhou Fang and some Guangxi Forestry Department officials, visited nine sites within the reported range area of the White-eared Night Heron in Guangxi. The sites surveyed included nature reserves, feng shui woods, tree farms, reservoirs, and flooded fields and fishponds near villages. During the trip, the survey team visited sites where White-eared Night Herons were reported to nest or forage. The breeding season had not yet begun, such that only old nests, feathers and droppings could be found at the nesting sites. In the evening of the second day of the survey, two team members sitting by a paddy field saw a White-eared Night Heron fly from nearby forests for a distance of around 30 meters. It settled in a nearby paddy field. Since it was dark, we could not observe foraging or other activities. This discovery excited everyone since it was the first record made by non-mainland Chinese researchers of wild White-eared Night Herons in the wild in the last 60 years. Although we continued our visits to sites with previous records, no further record could be made in Guangxi.

On 6th April the team left Guangxi, heading to another distribution area, Chebaling National Nature Reserve in northern Guangdong, where Dr. Llewellyn Young of WWF HK and an official from the Guangdong Forestry Department joined the team. The following morning the team with the help of staff from the reserve, interviewed a farmer who caught White-eared Night Herons twice the previous summer. In the afternoon that day, the team, using the information supplied, divided into three groups sitting at different sites along the river and waited. At around 7p.m., one of the team members saw several herons flying from the forest in four different sightings. They could not be identified to species level because it was too dark. During the following two evenings, all team members waited at the same site and two herons were seen in turns flying down stream at 7p.m. each night. From the bright pale throat coloration,

it was confirmed on both evenings that at least one of the two herons was a White-eared Night Heron, and one of them was recorded with a photo.

We visited many different habitats during these two weeks. As more information on the White-eared Night Heron was obtained, we discovered that they are so seriously disturbed by human activities that their population must be close to extinction. Several reserves in the Guangxi range had old reports, while some other records have been made outside reserve. Logging and hunting were common in the region. White-eared Night Herons sometimes fly to paddy fields and fishponds in villages and nest in nearby forests. During the breeding season, villagers hunt birds and take their eggs in the nesting area, further reducing the number of this species. The Guangxi Forestry Department has expressed great concern about this, and the first nature reserve for White-eared Night Herons was formally established at a nesting site in Fusui County last year. Another reserve will be established this year at Shangsi. In Chebaling of Guangdong, the birds lived in and around the nature reserve where good forests and streams could be found, though sometimes they fly to nearby villages to forage. As most guns of the villagers have been confiscated since the establishment of the reserve, hunting is not severe and the threat to White-eared Night Herons is not so high. Furthermore, television stations and newspapers in Guangdong and Guangxi report news of White-eared Night Heron from time to time so that local citizens can know more about this bird and understand the importance of protecting it.

To be able to observe one of the rarest birds in the world and to obtain more detailed information about the species within just two weeks was the fruitful result of cooperation between the Guangxi Forestry Department, Guangdong Forestry Department, Prof. Zhou Fang of Guangxi University, Prof. Hafner, Heron Specialists Group of IUCN and SCBT. In order to allow the White-eared Night Heron to survive, KFBG has been asked by IUCN to coordinate the drawing up of a conservation action plan to better preserve the remaining populations and habitats of this species.

海南虎班鳽（成鸟）（李国诚摄）
White-eared Night Heron (adult) (by LEE Kwok Shing / KFBG)

原住民知识与生物多样性保护

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在1992年里约召开的世界环境与发展大会(UNCED)上，通过了「国际生物多样性保护公约」(Convention on Biodiversity)。会后，包括中国在内的许多国家都制定了若干履行该公约的法律与条例，有力地推动了各国生物多样性保护工作，然而，生物多样性的保护不仅仅是一种政府行为，而是一种由公众支持下的大众社会行为，特别是那些拥有生物物种十分丰富地区的人民大众承担著主要的保护责任，华南地区就是这样的地区之一。近年来，世界各地原住民(indigenous people)和原住知识(indigenous knowledge)已被公认为是当今保护自然的重要力量。原住民知识是在世世代代居住在某一地区的人民长期积累的民间知识，包含著对分类、利用、保护生物物种及生态系统的丰富知识。由于原住民知识是建立在长期人与植物直接相互作用的基础上，点点滴滴凝聚而成，并经过历史验证行之有效代代相传的知识，不仅具有文化遗产的价值，而且具有应用发展的巨大潜力，正是由于原住民知识的普遍存在和应用，今日地球上才保存了丰富多姿的生物多样性和生态系统，当今世界上90%以上的生物遗传资源仍然是掌握在各地原住民手中，而不是由科学家所掌管。

原住民知识对于生物多样性保护的作用主要通过以下方式来实现：

(1) 传统有用物种的可持续利用如可食用与药用植物、竹类、野果、野菜等；
(2) 传统文化信仰对某些类群、关键种和生态系统的保护，如榕树、竹类、杜鹃、圣山、圣林等；
(3) 原住民对当地生物区系中有用野生动植物的选择性人工饲养驯化、栽培和传播；
(4) 原住民对居住环境的自然景观系统进行人为调整和精心管理，以求得文化 — 生物环境一致性，创造出生物 — 文化(Bio-culture)类型的多样性；
(5) 传统医药知识的延续有利于药用植物的种源、种群和生物多样性保护。

目前，专门从事生物多样性与传统知识研究和应用的一间民间机构已于1995年在云南省昆明成立，这就是云南省生物多样性和传统知识研究会(Center for Biodiversity and Indigenous Knowledge，简称CBIK; 网址：cbik.com.cn)，运用参与式方法(participatory approach)专门从事云南少数民族地区内原住民社区的生物多样性保护、森林保护和特有农作物遗传资源的保护工作，并已经取得了良好的成效。

Indigenous knowledge and biodiversity conservation

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The Convention on Biodiversity was passed at the 1992 UNCED held in Rio de Janeiro. After the conference, many countries including China set up certain laws and regulations to promote biodiversity conservation in these countries. Nevertheless, biodiversity conservation is not only a governmental act, but also a social act supported by the general public. People living in a region with rich biodiversity, like those living in South China, shoulder greater conservation responsibility. In recent years, indigenous people and indigenous knowledge over the world are considered essential forces to conserve nature. Indigenous knowledge refers to the accumulated folk knowledge shared by those originating and living in a particular place, including the wealth of knowledge to identify, to use and to conserve different species and ecosystems. Since this knowledge is founded on the long-term and direct interaction between humans and plants and has been passed from generation to generation after trial and error, it is valuable as cultural heritage and has high potential in application and development. The survival of rich biodiversity and ecosystem functioning is a result of the widespread use and application of indigenous knowledge. Today, over 90% of biological and genetic resources are still kept in the hands of indigenous people instead of those of scientists.

Indigenous knowledge can be applied in biodiversity conservation in the following ways:

1. Sustainable use of useful traditional species such as edible plants, medicinal herbs, bamboos, wild fruits, wild vegetables, etc;
2. Conservation of certain taxa, key species and ecosystems due to traditional beliefs; examples are banyan, bamboo, azalea, sacred hills and sacred forests, etc;
3. Selective artificial domestication, cultivation and dispersal of useful wildlife in local biological communities.
4. Modification and management of natural landscape systems in the residential environment of indigenous people, in order to achieve harmony between local culture and the biological environment, and thus creating a diverse bio-culture;
5. The passing on of traditional medicinal knowledge may lead to the conservation of the source and population of particular medicinal herbs and also of biodiversity in general.

The Center for Biodiversity and Indigenous Knowledge ("CBIK", website: cbik.com.cn), an NGO established in 1995 at Kunming, Yunnan, specializes in researching and applying indigenous knowledge of biodiversity. This NGO adopts the participatory approach and carries out biodiversity conservation for indigenous people living in the Yunnan minority tribes, forest conservation and conservation of genetic resources of special crops. So far, the results are encouraging.

木论自然保护区鱼类多样性

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木论自然保护区位于广西环江毛南自治县西北部，地处云贵高原东部边缘，属中亚热带季风湿润气候区。其水体属于龙江的支流大环江水系。保护区为典型喀斯特山区，岩溶地貌复杂，较多溶洞及地下河。为鱼类提供了复杂多样性的生态环境，因而鱼类资源丰富。

经华南生物多样性保育计划初步考察，保护区内共有鱼类41种，分别属于4目13科34属，占龙江水系鱼类总数的38.3%。其中伍氏半鳘(*Hemiculterella wui*)、北江光唇鱼(*Acrossocheilus beijiangensis*)、贵州金线鲃(*Sinocyclocheilus multipunctatus*)、南丹高原鳅(*Triplophysa nadenensis*)、青鳉(*Oryzias latipes*)、瑶山栉鰕虎鱼(*Ctenogobius yaoshanensis*)全为在龙江水系首次发现。而伍氏半鳘在龙江水系邻近的红水河水系和融江水系都有记录；北江光唇鱼则是以前在广西仅于融江水系有记录；金线鲃属鱼类为云贵高原东部特有的鱼类，在广西主要分布在红水河水系，在龙江水系只有短身金线鲃于天河有记录，宜山金线鲃于龙江有记录，此次采到贵州金线鲃，使龙江水系的金线鲃属鱼类又增多了一种，说明了金线鲃属鱼类在龙江水系分布比较广泛；高原鳅属鱼类是高原鱼类的重要组成部分，以前在广西局限于红水河水系，因此认为红水河是其分布的边缘，此次在保护区内采到一尾南丹高原鳅，将高原鳅属鱼类在广西的分布线往北推进了一个水系；青鳉在中国是一广布种，分布于长江、珠江及福建省水系。属小型鱼类无经济价值，往往不为人们重视；但从70年代以来有明显减少趋势。广西淡水鱼类志(1981)中，横县有记录且仅有一尾标本，此次在保护区内也仅采到二尾，说明青鳉在广西受胁迫，有必要寻找原因并给予保护。至于瑶山栉鰕虎鱼，以往认为仅分布于大瑶山，此次为大瑶山以外地区首次发现，且种群数目颇多。

就鱼类区系来说，保护区鱼类应属于南亚亚区的云贵高原东部的鱼类区系。且因为保护区所处的龙江盆地位于桂北和桂西北边缘山地之间，而桂北山地为隆起的古陆受长期的侵蚀而成，桂西北山地为云贵高原边缘部分经流水切割而成，所以保护区所在的龙江水系应是广西境内高原鱼类的界限。而此次考察因受时间限制，只涉及地表河流，地下河及溶洞均未调查，估计应有为数不少的营穴居鱼类未为人所知。而一般说来，洞穴鱼类受生存环境所限，种群数目较少，易破坏而难恢复，因此应加紧对这一类鱼类的调查，给予保护。此次考察也发现多数河流的鱼类资源遭到人为破坏，因此，很有必要加强宣传教育和对水生生物的保护。

Fish diversity in Mulun Nature Reserve

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Mulun Nature Reserve lies in the northwestern part of Huan Jiang Mao Nan autonomous county, on the edge of the eastern Yunnan-Guizhou Plateau. It has a moist central subtropical monsoon climate. Its water body is the Dahuanjiang river system, a tributary of Longjiang. Mulun Nature Reserve is a typical Karst mountainous region and its geographical features are complex, with many caves and subterranean streams. As these features provide a complex and varied ecological environment for fish, the species richness and resources of fish in this reserve are high.

A preliminary survey of Mulun NR under the South China Biodiversity Conservation Programme found 41 fish species belonging to 4 orders, 13 families and 34 genera, representing 38.3% of the known fish species in Longjiang. Of these species *Hemiculterella wui, Acrossocheilus beijiangensis, Sinocyclocheilus multipunctatus, Triplophysa nadenensis, Oryzias latipes* and *Ctenogobius yaoshanensis* were found for the first time in the Longjiang river system. *Hemiculterella wui* had been recorded in two nearby rivers, namely Hongshuihe and Rongjiang. *Acrossocheilus beijiangensis* was recorded once before in the Rongjiang river system in Guangxi. *Sinocyclocheilus* is endemic to the eastern Yunnan-Guizhou Plateau, and its distribution in Guangxi is mainly restricted to the Hongshuihe river system. The species previously found in Tianhe and the Longjiang river system are *Sinocyclocheilus* sp. 1 and *Sinocyclocheilus* sp. 2 respectively. The record of *Sinocyclocheilus multipunctatus* adds a new species of *Sinocyclocheilus* to the Longjiang river system. This shows that *Sinocyclocheilus* has a rather wide distribution in the Longjiang river system. *Triplophysa* is a major fish component in the plateau. They were once thought to be restricted to the Hongshuihe river system in Guangxi, and workers considered Hongshuihe as the boundary of the distribution of *Triplophysa*. The record of one *Triplophysa nadenensis* in Mulun Nature Reserve helps extend the distribution of *Triplophysa* in Guangxi northward to another river system. *Oryzias latipes* is a widespread species in China, distributed in river systems in Yangtze, Zhujiang and Fujian. This is a small size fish with low economic value and is often neglected by people, though its population decreased obviously starting from the 70s. According to the Freshwater Fishes of Guangxi Province (1981), it was recorded in Heng county and only one specimen was collected. In this study, two of this species were caught in the nature reserve, indicating that *Oryzias latipes* is being threatened in Guangxi and it is necessary to investigate in detail to protect this species. *Ctenogobius yaoshanensis*, which was thought to be restricted to Da Yao Shan, was found for the first time outside Da Yao Shan and the population was rather large at Mulun.

In terms of biogeography, the fish community in Mulun belongs to the eastern Yunnan-Guizhou Plateau sub-region of the South Asia subcontinent. The reserve is located inside the Longjiang basin, within the mountainous region on the border of the northern and northwestern parts of Guangxi. The mountains in north Guangxi are formed by continual erosion of the ancient protruding continent. The mountains in northwest Guangxi are formed by

rivers cutting through the edge of the Yunnan-Guizhou Plateau. Thus the Longjiang river system where the reserve is situated should be the limit of the distribution of plateau fish species in Guangxi. During this survey, due to the limited time, we studied only surface river and not subterranean streams and caves. Probably there are still quite a few subterranean fish species waiting to be discovered. Generally speaking, these fishes are limited by their environment and have small population sizes. They are vulnerable and difficult to be restored once depleted. More studies should be undertaken so as to conserve the fish fauna. The survey also revealed that the fish resources in many rivers and streams have been destroyed by human activities. Therefore, there is an urgent need to strengthen education and protection of aquatic life.

北江光唇魚 (李國誠攝)
Acrossocheilus beijiangensis (by LEE Kwok Shing / KFBG)

一九九九年在广西和海南记录到在全球或中国受威胁的生物
Records of globally or nationally threatened wildlife in Guangxi and Hainan, 1999

以下是1999年专业队员在嘉道理农场暨植物园主办的野外调查所作的纪录。
The following records were made by specialist team members during KFBG surveys in 1999.
国际濒危等级是以世界自然保护联盟提供的濒危物种红色名录为准；国家濒危等级是以国内的濒危物种红皮书为准。
Global status is based on IUCN Red list of Threatened Animals and Plants; national status is based on respective Red Data Books.
关键词 Key: CR = 极危 critically endangered; EN = 濒危 endangered; VU = 易危 vulnerable;
NT = 接近受危 near-threatened; R = 稀有 Rare

哺乳类 Mammals

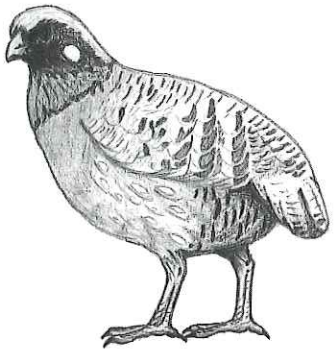
白头叶猴 *Trachypithecus f. leucocephalus* (全球：易危) 七月六日，下午二时，在广西崇左保护区海拔80米，见到十一只。
White-headed Leaf Monkey *Trachypithecus f. leucocephalus* (Global: VU) At Chongzuo NR, Guangxi. On 6 July, at 14:00 p.m.. 11 leaf Monkeys were seen at 80m

鸟类 Birds

褐冠鹃隼 *Aviceda jerdoni* (全球：接近受危) 八月一日，在广西岑王老山保护区海拔1450米，见到一只。
Jerdon's Baza *Aviceda jerdoni* (Global: NT) At Cenwanglaoshan NR., Guangxi. On 1 August, one was seen at 1450m.

凤头蜂鹰 *Pernis ptilorhynchus* (中国：易危) 八月三日和五日，在广西岑王老山保护区海拔1250米和大王岭保护区海拔825米，分别见到一只。
Oriental Honey Buzzard *Pernis ptilorhynchus* (China: VU.) 1 at Cenwanlaoshan NR., Guangxi, 3 August.; 1 at Dawangling NR., Guangxi, 5 August.

海南山鹧鸪 *Arborophila ardens* (全球：濒危；中国：濒危) 五月廿四日，在海南吊罗山保护区海拔770米，分别见到两只和听到两只；四月廿六日，在附近的白水岭海拔550米，听到一只。
Hainan Hill Partridge *Arborophila ardens* (Global: EN.; China: EN.) On 24 May, 2 heard and 2 seen at 770m, Diaoluoshan NR., Hainan; On 26 May, 1heard at 550m, Baishuiling, near Diaoluoshan.

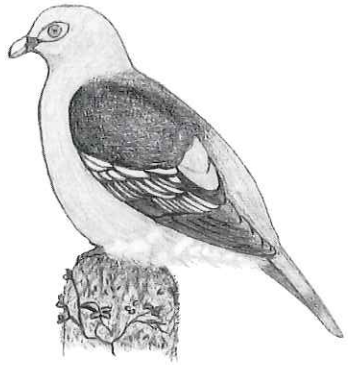

海南山鹧鸪 Hainan Hill Partridge

原鸡 *Gallus gallus* (中国：易危) 五月二十和二十二日，在海南牛角岭和哑吧田，分别见到一只。
Red Jungle Fowl *Gallus gallus* (China: VU.) 1 at Niujiaoling, Hainan, 20 May; 1 at Yabatien, Hainan, 22 May.

山皇鸠 *Ducula badia* (中国：易危) 六月十日，在海南五指山保护区海拔900米，见到三只；六月十三和十四日，在海南佳西保护区海拔140-800米，有九个记录，共十四只；六月十六日，在海南黎母山保护区海拔1000米，见到两只。
Mountain Imperial Pigeon *Ducula badia* (China: VU.) 3 at 900m, Wuzhishan NR., Hainan, 10 June; 9 records of 14 birds at 140-800m, Jiaxi NR., Hainan, 13-14 June; 2 at 1000m, Limushan NR., Hainan, 16 June.

绿皇鸠 *Ducula aenea* (中国：易危) 五月二十四日，在海南吊罗山保护区海拔800-900米，见到四只。六月十日，在海南五指山保护区海拔900米，见到十六只。
Green Imperial Pigeon *Ducula aenea* (China: VU.)
4 at 800-900m, Diaoluoshan NR., Hainan, 24 May; 16 at Wuzhishan NR., Hainan, 10 June.

鸟类 (续) Birds (Cont/d)



厚咀绿鸠 Thick-billed Green Pigeon

红翅绿鸠 *Treron sieboldii* (全球：接近受危) 五月二十六日，在海南吊罗山保护区海拔 150 米，见到十只。
Japanese Green Pigeon *Treron sieboldii* (Global: NT.) 10 at 150m, Diaoluoshan NR., Hainan, 26 May.

厚咀绿鸠 *Treron curvirostra* (中国：易危) 五月二十四日，在海南吊罗山保护区海拔 800 米，见到四只。
Thick-billed Green Pigeon *Treron curvirostra* (China: VU.) 4 at 800m, Diaoluoshan NR., Hainan, 24 May.

蓝背八色鸫 *Pitta soror* (全球：接近受危) 七月八日，在广西底定保护区海拔 850 米，见到一只。
Blue-rumped Pitta *Pitta Soror* (Global: NT.) 1 at 850m, Diding NR., Guangxi, 8 July.

短尾绿鹊 *Cissa thalassina* (全球：接近受危) 五月二十一日，在海南牛角岭，见到一只；六月十三日，在海南佳西保护区，见到两只。
Short-tailed Green Magpie *Cissa thalassina* (Global: NT.) 1 at Niujiaoling, Hainan, 21 May; 2 at Jiaxi NR., Hainan, 13 June..

褐胸噪鹛 *Garrulax maesi* (全球：接近受危) 五月二十二日，在海南哑吧田，见到四只；五月二十四至二十六日，在海南吊罗山保护区，有五个记录，共四十四只；六月十三和十四日，在海南佳西保护区，有四个记录，共五十只；六月十七日，在海南鹿母湾保护区，有三个记录，共三十只；七月八和九日，在广西底定保护区，有四个记录，共三十四只；七月十五日，在广西大新保护区，见到十只。
Grey Laughingthrush *Garrulax maesi* (Global: NT.) 4 at Yabatien, Hainan, 22 May; 5 records of 44 birds, at Diaoluoshan NR., Hainan, 24-26 May; 4 records of 50 birds, at Jiaxi NR., Hainan, 13-14 June; 3 records of 30 birds, at Lumuwan NR., Hainan, 17 June; 4 records of 34 birds, at Diding NR., Guangxi, 8-9 July; 10 at Daxin NR., Guangxi, 15 July.

海南柳莺 *Phylloscopus hainanus* (全球：易危) 五月二十四至二十五日，在吊罗山保护区，有七个记录，共三十二只；六月十一日，在五指山保护区，见到十只；六月十三和十四日，在佳西保护区，有六个记录，共六十六只；六月十六日，在黎母山保护区，有三个记录，共五十只。
Hainan Leaf Warbler *Phylloscopus hainanus* (Global: VU.) 7 records of 32 birds, at Diaoluoshan NR., 24-25 May; 10 at Wuzhishan NR., 11 June; 6 records of 66 birds, at Jiaxi NR., 13-14 June; 3 records of 50 birds, at Limushan NR., 16 June.

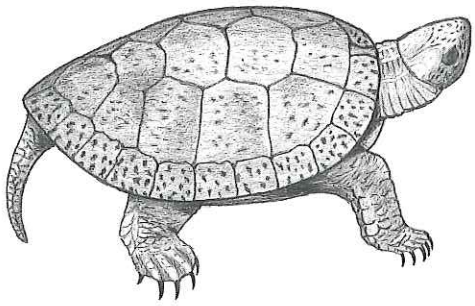
淡紫鸸 *Sitta solangiae* (全球：易危) 五月二十四至二十六日，在海南吊罗山保护区海拔 550-900 米，见到五只；六月十一日，在五指山保护区，见到一只；六月十三日，在海南佳西保护区海拔 800 米，见到四只；六月十六日，在海南黎母山保护区海拔 850-1240 米，见到八只。
Yellow-billed Nuthatch *Sitta solangiae* (Global: VU.) 5 at 550-900m, Diaoluoshan NR., Hainan, 24-26 May; 10 at Wuzhishan NR., 11 June; 4 at 800m, Jiaxi NR., Hainan, 13 June; 8 at 850-1240m, Limushan NR., Hainan, 16 June.

爬行类 Reptiles

平胸龟 *Platysternon megacephalum* (中国：濒危) 五月二十四日，在海南吊罗山保护区看到一只。
Big-headed Terrapin *Platysternon megacephalum* (China: EN.) 1 at Daiaoluoshan NR., Hainan, 24 May.

海南闭壳龟 *Cuora galbinifrons* (中国：濒危) 六月十七日，在海南鹿母湾保护区，有村民捉到一只。
Indo-chinese Box Terrapin *Cuora galbinifrons* (China: EN.) 1 caught by a villager in Lumuman NR. Hainan.

爬行类 (续) Reptiles (Cont/d)



四眼班水龟 Beale's Eyed Terrapin

四眼班水龟 *Sacalia bealei* (全球：易危；中国：濒危) 六月十三日，一只被海南佳西保护区附近的村民饲养。
Beale's Eyed Terrapin *Sacalia bealei* (Global: VU.; China: EN.) 1 kept by villagers near Jiaxi NR., Hainan, 13 June.

灰鼠蛇 *Ptyas korros* (中国：濒危) 五月二十四日，在海南吊罗山保护区看到一条；六月十七日，在海南鹿母湾保护区看到一条。
Indochinese Rat Snake *Ptyas korros* (China: EN.) 1 at Diaoluoshan NR., Hainan, 24 May; 1 at Lumuwan NR., Hainan, 17 June.

滑鼠蛇 *Ptyas mucosus* (中国：濒危) 五月十九日，在海南青皮林保护区看到一条；七月十三日，在广西弄化保护区看到一条。
Common Rat Snake *Ptyas mucosus* (China: EN.) 1 at Qingpilin NR., Hainan, 19 May; 1 at Nonghua NR., Guangxi, 13 July.

两栖类 Amphibians

大鲵 *Andrias davidianus* (中国：极危) 八月四日，在广西岑王老山保护区看到一条。
Chinese Giant Salamander *Andrias davidianus* (China: CR.) 1 at Cenwanglaoshan NR., Guangxi, 4 August.

棘腹蛙 *Rana boulengeri* (中国：易危) 八月，在广西岑王老山保护区看到几只。
Spiny-bellied Frog *Rana boulengeri* (China: VU.) Several at Cenwanglaoshan NR., Guangxi, August.

鱼类 Fish

异鱲 *Parazacco spilurus* (中国：易危) 五月和六月，在海南尖岭保护区、五指山保护区、黎母山保护区和鹿母湾保护区，都有记录。
Minnow *Parazacco spilurus* (China: VU.) Recorded at Jianling NR., Wuzhishan NR., Limushan NR. and Lumuwan NR., Hainan, May and June.

植物 Plants

鹿母兰 *Micropera poilanei* (中国：稀有)
六月，在海南中部鹿母湾自然保护区内发现到这中国兰科植物的新记录属。
Micropera poilanei (China: R.)
A new recorded genus of Orchidaceae for China was found at Lumuwan N. R. in Central Hainan in June.

二歧莎草蕨 *Schizaea dichotoma* (中国：稀有)
五月，在海南东南部青皮林自然保护区内找到数丛野生植株。
Schizaea dichotoma (China: R.)
Several clumps of the plant were found at Qingpilin N.R. in southeastern Hainan in May.

尖叶原始观音座莲 / 尖叶古莲蕨 *Archangiopteris tonkinensis* (中国：濒危)
六月，在海南中部鹿母湾自然保护区内发现到一株。
Archangiopteris tonkinensis (China: EN.)
An individual was found at Lumuwan N.R. in Central Hainan in June.

家国事

北京林业局的科学家发现，植林山坡在以往四年的表土流失比空旷山坡的平均数字少 80%，在旱年少 97%。 **(中国日报(香港版) 26/11/1998)**

据中国科学院和中国林业科学院的研究人员指出，中国是世界上第三个严重受酸雨侵蚀的地区，仅次于欧洲和北美洲。一九八五年至九三年间，受酸雨沉积物影响的地区由一百七十五万平方公里增至二百八十万平方公里(占土地面积百分之二十九)，中国林业科学院的王先生预料将有四成面积受影响。华南地区最受影响，因为当地的土质硷性较低，受破坏的树林数量从安徽的百分之一点三到浙江的百分之九点六不等。中国科学院的研究人员亦发现，酸雨为南部十二个省份带来直接的经济损失，损失的木材和农作物分别价值四十四亿(五亿三千万美元)和五千四百万人民币(六百五十万美元)。此外，酸性沉积物亦间接削弱树木对害虫的抵抗力。 **(中国日报(香港版) 07/12/1998)**

中国政府和世界银行联合赞助「贫穷地区林木开发计划」，于中国中部的贫穷地区保持长期参与，以发展林木资源。此计划主要是支持减低贫困、林木开发和改善环境管理。将一些外来及原产松树、杉和栗子种在 54 万 5 千公顷的土地上，而进一步的林木产品亦已推广，例如抽取松脂。 **(中国日报(香港版) 10/01/1999)**

正当中国庆祝野生动物保护条例十周年纪念时，林业局局长在隆安县，因杀死一只中国保护的稀有动物猕猴而引发骚动。他的暴行引起严重的评击及遭到解雇。 **(中国日报(香港版) 13/01/1999)**

中国计划开发更多木林，由 1300 万公顷增至 2700 万公顷，以迎合 2000 年国内对木材需求量的需要，主要会种植杉、马尾松和赤桉。政府亦打算加强幼木林的护理，因这会影响到幼木林的经济回报。 **(中国日报 12/03/1999)**

中国将不会为弥补护林运动所致的木材短缺而增加木材的入口。全国约有四十六万的人工林，其中七分之一的树木在五年以上便趋成熟，届时中国便可自给自足。不过仍然会从海外取得稀有树木和直径较大的木材。 **(中国日报(香港版) 09/04/1999)**

联合国粮食及农业组织报道，中国天然森林的面积每年下降四千平方公里。中国国家环境保护局公告，主要透过重新调配长江、嫩江和松花江的伐木工人来保护自然森林，预计会耗资七亿人民币(八百四十三万美元)。 **(中国日报(香港版) 24/04/1999)**

中国已建立各类自然保护区 926 个，占国土面积 7.64%，超过世界平均 7% 的水平，全国有 15 处保护区加入了「世界生物圈保护区网」，并建成 200 多处珍稀濒危物种基地。 **(人民日报 26/04/1999)**

南韩政府决定于中国沙漠地区建造大规模防风林，农业部辖下的林业厅将会从中国沙漠地区中选择一适当的区域造林，以防范黄沙季节性地东飘至朝鲜半岛。南韩政府已委派两名造林专家往中国大漠研究造林树种、规模及估计效用。 **(明报 27/04/2000)**

广东、广西、海南

松林线虫正蔓延到东莞、惠州和广东东部林地，带来严重的经济损失。 **(明报 08/12/1998)**

随著山边植林面积扩展至一千三百平方公里，深圳百分之四十九的土地面积现已成为森林。 **(深圳日报 15/03/1999)**

自一九九四年，海南岛禁止砍伐树木。所以海南岛的森林面积迅速增至 2000 万亩(133 万公顷)，并逐步建成热带森林、沿海防护林和丰产林。这样，效益得以大大提高，而森林活立木蓄积量已达 8000 多万立方米，包括发展 300 万亩(20 万公顷)的丰产林，并成为中国八大人工速生丰产森林之一。 **(深星时报 10/04/1999)**

日前，猫儿山自然保护区内又有两株年龄在三百年以上的铁杉树已经死亡。至今，猫儿山一点二万公顷原始森林中仅剩八百六十四株古铁杉，比一九七六年成立保护区之初减少了三百三十六株。造成铁杉大量死亡的原因究竟是树木老化还是病虫害，是大气候环境因素还是人为的破坏，有关林业专家尚未作出定论。 **(文汇报 12/04/1999)**

经过二十年艰辛努力后，海南坡鹿得以在海南免于绝种危机，其群种于一九七六年的二十八头增至近年的七百头。这成果的主要原因是当地成立了海南坡鹿的理想繁殖地——大田自然保护区。

由于对当地村民的教育成功，加上积极拘捕非法狩猎者，海南坡鹿的群种数目显著增加。（文汇报 07/05/1999）

海南制定了未来三十年生态发展的蓝图，包括扩充林木面积(约占岛上面积的五成半)、种植二百平方公里的海岸森林带以及处理更多液体和固体的林木废料。(中国日报 (香港版) 11/05/1999)

政府有意将香港南丫岛的深湾列为保护区，并在每年六月至十月绿海龟产卵期间，将深湾列为限制游人出入保护区，除居民之外，游人必即申请许可证才可进入。此外，渔农处正计划在绿海龟的背上刻上记号。(苹果日报 21/06/1999)

工作人员在广西天峨县发现稀有的树蕨，它是全球濒危植物之一，调查当日，研究人员于林多农庄发现近三千株的树蕨，广西有关部门已采取措施实施保护它们。(中国日报 06/10/1999)

彩鹬在香港仅有的两个家—锦田沼泽地和松柏朗，将受西北铁路、九广东铁和路政署的工程威胁而岌岌可危。彩鹬为数仅有一百只，专家对其认识亦有限。绿色团体已强烈反对九铁工程，并要求政府加强保护彩鹬。(苹果日报 18/10/1999)

香港西贡深涌淡水湿地是全球唯一有文献记录的罕有黑叉尾斗鱼的生境地，可是深涌大部份湿地已填平改作为高尔夫球练习场。这个全球罕有物种正面临严重威胁。因为深涌并没有被划为保护区、郊野公园或富生态价值的地区，所以要保护这片湿地，绿色团体可算是爱莫能助。去年，香港大学生态及分类学系研究生陈辈乐联同嘉道理农场的工作人员，在深涌拯救了三百尾黑叉尾斗鱼，而未被拯救的鱼就被活埋于人工草地中。(苹果日报 01/02/2000)

香港的河溪为超过七十种的淡水鱼种提供栖身之所，另外逾四十种的咸水鱼类则于河口栖居。可是，基于改建河道而造成的污染和对鱼类栖所的破坏，约三成的土生淡水鱼正受到濒危的威胁。过往十年间，河道整治工程破坏了香港逾六成的河流及许多淡水的溪流，十一个关注环境的团体在二零零零年三月十四日—全球保护河流运动的国际日，反对兴建堤坝，亦要求政府不要再破坏本土自然河川生态。（英文虎报 15/3/2000）

华南点滴

鸟类学家谓离上海不远的崇明岛对由亚洲东北部飞往澳洲的候鸟极为重要，正需要特别保护计划。一百零三种过百万只的雀鸟多聚居此岛东面的湿地，面积约二百二十平方公里(占全岛总面积五分之一)。(中国日报 (香港版) 04/01/1999)

一个保护涉禽的自然保护区已在上海崇明岛成立，并将会成为「中国第三个国际涉禽保护网络成员之一」。崇明岛是中国的第三大岛，有 300 多万的雀鸟住在那里，很多都是全球或国家稀有、濒危或受保护种，包括国家一级保护的白鹤、中华秋沙鸭、白头鹤。(深星时报 12/05/1999)

四川将投资二至三百万人民币用以发展四姑娘山景区，其中包括面积达 1,560 平方公里的生态公园，此外，当地正于三百公里外的成都兴建一条高速公路。（北京专报 25-31/01/1999）

重庆早于五十年代已开始于长江流域种植护林带，到一九八九年已植有超过十亿棵树。在成立此护林系统后，流入长江的淤泥比八零年代的减少近 30%。（新华通讯社 08/10/1999）

国家林业局对福建省林木资源第四次调查结果显示，目前福建省森林覆盖率达百分之六十点五，比第三次调查时的百分之五十七点三，上升了三个百分点，仍居全国第一位。自一九七八年以来，福建省已连续二十三年保持全国森林覆盖率第一。根据这次调查，福建省现有林地面积九百零一点八三万公顷，活立木总蓄积量有四亿多立方米，分别比上次清查增加了三百四十六点二四万公顷和二千二百九十八万公顷。(新华通讯社 16/03/2000)

长江北望

辽宁省刚于浑阳附近开放一家蓄养十头东北虎的公园。（英文虎报 01/01/1999）

国家林业局公告正严重打击偷捕藏羚羊以抽取其皮毛之行为。青藏高原的可可西里自然保护区反偷猎野牛小队领导人 Zhaba Doje 于一九九八年十一月被杀害。(中国日报 14/01/1999)

辽宁的森林覆盖率自一九四九年进行植林和森林保护后，已比以前多出了一倍。很多地区的居民已采用甲烷代替柴作燃料。土壤侵蚀的情况亦已改善，在辽宁东部，每立方米的泥沙含量由一百零六公斤降至六十公斤，地下水位则增加三至四米。(中国日报 (香港版) 18/01/1999)

到目前为止，十一人因在甘肃闽江森林非法伐木而被捕，连日来，每天有二百立方米的森林被砍伐。 **(中国日报 (香港) 04/02/1999)**

世界银行以超过五年的时间，拨款一亿五千万美元作黄土高原第二期的土壤侵蚀管制计划，覆盖四大严重受侵蚀的地区，包括陕西、山西、甘肃和内蒙古，合共二万平方公里。 **(中国日报 (香港版) 25/02/1999)**

干旱的中国西北部将会种植千计以上公顷的树木，以尝试阻止失地变成沙漠。在新强的塔里木河将会种植树木、草和其他植物，这将会变成「人工绿洲」。 **(南华早报 04/03/1999)**

大量砍伐树木和过度畜牧，引致蒙古一些干旱地区土质恶化，变成沙漠。一直关注内地环境保护的本港环保团体长春社，去年与当地政府合作，在距离北京四百多公里的内蒙古，进行植树计划，这名为「绿色礼物送祖国」的计划，目标在 1998 年至 2000 年内种植十二万棵树，占地大约有千分之一个香港，并有大约 800 名香港的义工参与。 **(大公报 07/03/1999)**

自八十年代，河北省在首都实施了绿化政策，平原绿化、沿海防护林、治沙工程，已完成造林四千一百零三亩。森林资源持续快速增长，全省有林地面积由建国的 777 万亩，增加到 5349 万亩，森林覆盖由 3.4% 增加至 19%，并推出不同种类的森林副产品包括木材、果品和花卉，而生态旅游亦同时推广。 **(大公报 06/04/1999)**

在努力改善山西省的生态环境下，野生动物的数量大大增加，褐马鸡的数量由过去 2400 只增至最近的 4500 只，而猕猴由 290 头，增至现在的 500 头。庞泉沟、芦芽山、历山及蟒河四个自然保护区透过封山育林，森林的面积已扩至 500 公顷，林木蓄积量大为增加。 **(人民日报 13/04/1999)**

中外一项联合国调查表明，生活在中国境内的东北虎正急剧减少，目前已不足二十只。中、美、俄野生生物专家组从一月十六日起到三月底，对黑龙江、吉林两省境内的完达山，和长白山余脉等主要野生东北虎栖息地进行调查，黑龙江东北虎的数量为五至八只，而吉林则有十只左右。 **(明报 14/04/1999)**

近两年，保护重点湿地　脐 s 江三江自然保护区的工作正大力加强，方法包括禁止使用土地耕种、兴修过境水利工程和三年内禁止在湖及河流捕鱼，退耕还复植被 1700 多亩。另外，当局会检控森林破坏者，并严禁打猎，更销毁渔网二万多米，放生青蛙和幼鱼回大自然。此方法实施后，三江自然保护区的鸟兽数量大幅增加，并成为很多鸟类重要的栖息之所，如环头雉、海雕、丹顶鹤和柳雷鸟。 **(大公报 22/04/1999)**

一支科学考察队，包括地理学家、植物学家和动物学家，在四川、贵州和重庆交界一个原生林内，发现已绝种二十年的华南虎。华南虎已被列为全球濒危的十大物种之一。 **(成报 12/05/1999)**

北戴河地处渤海之濒，是观鸟的热门地点。其独特地理位置、茂密的树林、充足的淡水和丰富的食物，足以为南来北往的东亚候鸟提供暂时的栖所。据中外鸟类学家和「鸟迷」们的观察记录表明，北戴河及附近一带共发现鸟类四百零五种(约占中国一千二百五十三种鸟类的三分一)，包括六十八种国家重点保护动物，如丹顶鹤。观鸟、爱鸟、护鸟早已成为世界上一种时尚。近年来，中国内地也成立了一些观鸟组织如北京的自然之友。北戴河是观鸟的绝佳地点，尤以春秋两季为甚，更被誉为世界四大观鸟区之一。 **(明报 19/07/1999)**

美国和日本传入的松林线虫，正以每年十五至三十公里的惊人速度，从安徽南部向黄山松林侵袭。政府已为黄山风景区修筑一道宽四公里的无松带，阻止松林线虫向黄山蔓延。这线虫一个月内便可破坏一株百年的老松树。根据调查所得，松林线虫是从美国和日本的木质包装品中传入的。为了作出补救，国家发出公告，自明年开始，进口中国物品尽量避免用木制包装物，并须做好有效的消毒工序。 **(苹果日报 29/12/1999)**

西藏森林和野生动物资源丰富，森林总面积约有七百一十七万公顷，内里有高等植物逾六千四百个种，野生动物则超过二千三百种。为了保护这片易受破坏的生态环境，西藏自治区的林业部已采取若干的措施，包括禁止出口木材和树产品，并严厉执行许可伐木制度。另一方面，已大大加强了草木种植和保育野生动物的工作。 **(新华通讯社 10/3/2000)**

National

• Beijing Forestry Bureau scientists have found that forested slopes had an average of 80% less run-off over four years, and 97% less in a drought year, than cleared slopes. **(China Daily (HK Edition), 26/11/1998).**

• China is the world's third worst-acidified region, after Europe and North America, according to CAS and CAF researchers. From 1985 to 1993, the area affected by acid deposition rose from 1.75 million sq km to 2.8 million, or 29% of the land area, and CAF's Wang Yanhui estimates 40% is now affected. South China is worst affected, as soil alkalinity is lower there: the amount of damaged forest ranged from 1.3% in Anhui to 9.6% in Zhejiang. CAF researchers found acid rain has caused direct economic losses in 12 southern provinces of Y44 billion (US$5.3b) in lost timber, and Y54 million (US$6.5m) in lost crops. Acid deposition affected trees partly by weakening their resistance to pests. **(China Daily (HK Edition), 7/12/98).**

• The Chinese Government and the World Bank jointly sponsored the Forestry Development in Poor Areas Project for developing forest resources in poor areas of central and western China on a sustainable and participatory basis. This project aims to support poverty reduction, forestry development, and improved environmental management. Some exotic and indigenous species of pine, fir and chestnut have been planted on 545,000 hectares. Processing of forestry products such as pine resin extraction has been promoted. **(China Daily (HK Edition), 10/01/1999)**

• The killing of a rhesus monkey, which is one of China's protected rare animals, by the director of the forestry bureau in Long'an County caused a stir as China celebrated the 10th anniversary of the Law on Wild Animal Protection. His violation of the law attracted harsh criticism and resulted in his removal from office. **(China Daily (HK Edition), 13/01/1999)**

• China had plans to create an additional 13 to 27 million hectares of timber forests by the year 2000 to meet the increasing domestic timber demand. Mainly China fir, Masson pine and Eucalyptus were to be planted. The Government also planned to strengthen the tending of young timber trees, which affects the economic returns of the forest. **(China Daily 12/03/1999)**

• China will not increase timber imports to compensate timber shortages caused by its forest protection campaign. It will work towards self-sufficiency: of China's 460,000 sq. km area of plantation forest, one-seventh will reach maturity over the next 5 years. However, it will obtain rare trees and large-diameter logs from overseas. **(China Daily (HK Edition), 09/04/99).**

• FAO reported that China's natural forests are declining by 4,000 sq. km per year. SEPA announced plans to spend Y7 billion (US$843m) on preserving natural forests, mainly by relocating loggers along the Yangtze, Nenjiang & Songhua Rivers. **(China Daily (HK Edition), 24/04/99).**

• There are 926 nature reserves in China covering about 7.64% of the area of the whole country, which is higher than the average 7% standard in the world. Fifteen nature reserves in China are "UNESCO Man and the Biosphere Reserves" and more than 200 nature reserves had been established for endangered species. **(People's Daily, 26./04./1999)**

• The South Korean government decided to establish a large-scale windbreak in deserts in the Mainland China. The Forestry Office under Agriculture Department will choose a suitable area from China's desert regions to develop a windbreak so as to combat seasonal dust storms blowing to South Korea. Two afforestation experts were dispatched to China to determine the species to be grown, the scale of the windbreak and its estimated effectiveness. **(Mingpao, 27/04/2000)**

GUANGDONG, GUANGXI, HAINAN & HONG KONG

• Pinewood nematode is spreading into plantations in Tonguan & Weizhou, eastern Guangdong, causing severe economic loss. **(Ming pao, 08/12/1998).**

• Following hillside afforestation of 1,300 sq.km, some 47% of Shenzhen's land area is now forest. **(Shenzhen Daily, 15/03/1999).**

• Logging has been prohibited in Hainan since 1994. Since then, the area of forest in Hainan has rapidly increased to 20 million *mu* (1.33 million ha). The storage capacity of standing trees in forest has reached more than 80 million square meters with the establishment of natural tropical forests, coastal shelter forests along the sea and production forests. This resulted in high ecological benefits including the formation of 3 million *mu* (0.2 million ha) of production forest. **(Shenxing Times, 10/04/1999)**

• Two more individuals of Chinese hemlock (*Tsuga chinensis*) over 300 years old were found dead in Mao Er Shan Nature Reserve. Only 864 individuals of Chinese hemlock remain in 12,000 hectares of primary forest. The population size has been reduced by 336 individuals since 1976. The reason for this massive loss of Chinese hemlock is not known. Forestry specialists pointed out that it may be due to aging of the trees, the presence of pests or the change in the climate. **(Wen Wei Po 12/04/1999)**

• Eld's deer (*Cervus eldi hainanus*) has been rescued from the verge of extinction in Hainan after more than 20 years of protection effort. The population size increased from 28 individuals in 1976 to over 700 recently. It was mainly due to the establishment of Datian Nature Reserve which provided an ideal breeding site for Eld's deer. Meanwhile, a significant increase in the Eld's deer population size was achieved by effective education for the villagers and prosecution of illegal hunters. **(Wen Wei Po, 07/05/1999)**

• Hainan has produced a blueprint for ecological development over the next 30 years. It includes expanding forested areas to 55% of the island, planting a coastal forest belt of 200 sq km, and treating more of its solid and liquid waste. **(China Daily (HK Edition), 11/05/1999).**

• The Hong Kong government intended to incorporate Sham Wan on Lamma Island, where Green Turtles (*Chelonia mydas*) lay eggs, into a restricted area during the egg laying season from June to October, during which only residents and visitors with permits would be able to enter. The Agriculture and Fisheries Department also planned to track Green Turtles. **(Apple Daily, 21/06/1999)**

• A globally endangered tree fern species, *Alsophila spinulosa*, was found in Tian'e County of Guangxi. Nearly three thousand individuals were found by technicians from Linduo Forest Farm during a survey. The tree ferns are growing vigorously, some having a 30cm d. b.h. and reaching tens of meters in height. The relevant departments in Guangxi have adopted measures to protect them. **(Xinhua News Service, 06/10/1999)**

• Greater Painted Snipe (*Rostratula benghalensis*) solely found in Kam Tin marshes and Long Valley within Hong Kong, are threatened by engineering works including West Rail, East Rail and roadworks proposed by the Highways Department. There are only 100 individuals in Hong Kong and bird experts have little information about the species. Green groups strongly objected to all these developments and requested the government to increase effort in protecting the Snipe. **(Apple Daily, 18/10/1999)**

• Sham Chung, in Sai Kung of Hong Kong, is the one of the only habitats in the world with a record of Black Paradise Fish (*Macropodus concolor*). However, much of the wetland in Sham Chung has been developed into a golf practice course. Hence, this globally rare species is highly threatened. Since Sham Chung had not been zoned as protected area, country park, or land of ecological value, green groups were helpless in saving the wetland. **(Apple Daily, 01/02/2000)**

• Hong Kong's streams and rivers are home to more than 70 freshwater fish species, together with more than 40 brackish-water species living in river mouths. However, nearly 30 per cent of the native species are threatened with extinction due to pollution and habitat destruction, mainly caused by channelisation. More than 60 per cent of Hong Kong's rivers and many freshwater streams have been destroyed by channelisation in the past 10 years. Eleven environmental concern groups urged the Government to stop destroying the territory's natural rivers and streams on the International Day of Action Against Dams and for Rivers, Water & Life — a global campaign for the protection of rivers on 14th March, 2000. **(Hong Kong Standard, 15/03/2000)**

ELSEWHERE IN THE SOUTH

• Ornithologists Qian Fawen & Zhang Xu said Chongming Island off Shanghai is of global importance to birds of the NE Asia – Australia flyway, and called for a special protection plan. Over 1million birds of ~103 species use the island, mainly the eastern wetland area of some 220 sq km (1/5 the island area). **(China Daily (HK Edition), 04/01/1999).**

• A Nature Reserve for water birds has been established at Chongming in Shanghai and it has become the third member of the Asia-Australia Flyway Reserve Network in China. Chongming is the third largest island in China with more than a million birds living there. Many of them are globally or nationally rare, endangered or protected species including those on Category I of the State Protection List in China such as White Stork (*Ciconia ciconia*), Hooded Crane (*Grus monacha*) and Chinese Merganser (*Mergus squamatus*). **(Shenxing Times, 12/05/1999)**

• Sichuan will invest Y2-3 billion in developing the Siguniang Mountain scenic area, including an ecological park of 1,560 sq km. An expressway is under construction from Chengdu, 300km away. **(Beijing Review, 25-31/01/1999).**

• In the 50s, Chongqing started planting belts of protection forests along the Yangtze River and there were over 1 billion trees planted up to 1989. After the formation of this protection forest system, the amount of silt discharge into the river has been reduced by nearly 30% compared with that in the 80s. **(China News from Hong Kong. com, 08/10/1999)**

• The fourth survey on forest resources in Fujian province by the State Forestry Administration shows that Fujian forest coverage has reached 60.5%, increasing by 3% compared to 57.3% in the third survey. Fujian forest coverage still ranks first in China. From 1978, Fujian has had the highest forest coverage for 22 years in succession. This survey reveals that Fujian now has a total forested area of 9 million ha and a timber reserve of 400 million m^3, which are respectively 3.5 million ha and 23 million m^3 higher than the last survey. **(Xinhua News Service, 16/03/2000)**

NORTH OF THE YANGTZE

• Liaoning Province has opened a park housing 10 Manchurian Tigers, near Shenyang. **(HK Standard., 01/01/1999)**

• State Forestry Administration announced a crackdown on poaching of Tibetan antelope (chiru) for shahtoosh. Zhaba Doje, commander of the wild yak anti-poaching squad in the Qinghai-Tibet plateau's Hoh Xil NR, was killed in November 1998. **(China Daily (HK edition), 14/01/1999).**

• Forest cover in Liaoning has doubled since 1949 through afforestation and forest protection. In many areas firewood has been replaced as fuel by methane gas. Erosion has been curtailed: in eastern Liaoning, the sand content has dropped from 106 kg to 60 kg per cubic metre, and the water table has risen by 3-4m. **(China Daily (HK Edition), 18/01/1999).**

• So far 11 people have been arrested for illegal logging in Minjiang Forest, Gansu, where some 200 cubic metres per day have been cut recently. **(China Daily (HK Edition) 04/02/1999).**

• The World Bank will supply US$150m over 5 years for the 2nd phase of the erosion control project in the Loess Plateau. The project covers 20,000 sq km of the world's worst eroded land, in Shaanxi, Shanxi, Gansu & Inner Mongolia. **(China Daily (HK Edition), 25/02/1999).**

• Thousands of hectares of trees are to be planted in the arid Northwest region of China in an attempt to reverse the loss of land to desert. Trees, grass and other plants will be planted along the Tarim River, in Xinjiang Region. It will become a "Man-made Oasis". **(South China Morning Post, 04/03/1999)**

• Logging and over-rearing of livestock caused soil degradation in dry areas of Inner Mongolia. Many forests have turned to deserts. Last year, the Conservancy Association of Hong Kong collaborated with the Inner Mongolia Government to carry out a tree-planting project in a region 400 miles from Beijing. This project was called "Green gift to China" and targeted to plant 120,000 trees from 1998 to 2000. About 800 volunteers from Hong Kong joined this project. **(Tai Kung Pao, 07/03/1999)**

• A greening policy has been implemented in the capital of Hebei

since the 1980s. About 41 million *mu* (2.7 million ha) of planted forests was established after the greening of plains, the planting of shelter forests and sand-control projects. Forest resources have been continuously growing from 7.8 million *mu* (0.5 million ha) of forest areas in the 1940s to 53.5 million *mu* (3.5 million ha) recently. The percentage coverage of forest areas increased from 3.4% to 19%. Different kinds of forest by-products are utilized including wood, fruits and flowers. The development of eco-tourism has also been promoted. **(Tai Kung Pao, 06./04/1999)**

• The estimate of the number of of Brown Eared Pheasants in Shanxi has increased from 2400 individuals in the past to 4500 individuals recently. The estimated number of Rhesus Monkeys (*Macaca mulatta*) has also increased from 290 to 500 individuals. The area of forest was extended to 500 hectares in four nature reserves after setting apart the hills for tree growing. **(People's Daily, 13/04/1999)**

• Research indicated that the number of Tigers (*Panthera tigris altaica*) in northeast China has rapidly decreased. Not more than 20 individuals can now be found. A group of specialists from China, the United States and Russia conducted research on the habitats of tigers at Wandashan and Changbashan in Heilongjiang and Jilin from January to March 1999. There were 5 to 8 tigers in Heilongjiang and about 10 individuals in Jilin. **(Ming pao, 14/04/1999)**

• Great effort has been put in protecting the Sanjiang Nature Reserve in Heilongjiang, one of the major wetlands in China, during the past two years. The protection measures include prohibiting the use of lands for farming, building irrigation works and forbidding catching fish in lakes and rivers for three years. More than 1,700 *mu* (113 ha) of vegetation has been recovered after the agricultural lands were surrendered. In addition, those people who destroyed the forest would be prosecuted. Hunting was also strictly forbidden. About 20, 000 meters in length of fishing nets were destroyed. Frogs and juvenile fishes were released into the wild. After implementing these measures, the bird community diversity at Sanjiang Nature Reserve has started to increase. This area has become an important habitat for many bird species such as Common Pheasant (*Phasianus colchicus*), Sea Eagle (*Haliaeetus* sp.), Japanese Crane (*Grus japonensis*) and Willow Grouse (*Lagopus lagopus*). **(Tai Kung Pao, 22/04/1999)**

• A group of researchers including geologists, botanists and zoologists discovered the track of South China Tiger (*Panthera tigris amoyensis*), in a primary forest between Sichuan, Guizhou and Chongqing. **(Sing Pao Daily News, 12/05/1999)**

• Beidahe is located by the sea of Bohai, and has become a popular place for bird watching. Its special geographical location together with its lush forest, abundant fresh waters and food supply make it a good stop-over place for migratory birds of East Asia. According to the observations of ornithologists and "bird enthusiasts" from all over the world, 405 species (i.e. about one-third of 1253 bird species in China) were recorded in Beidaihe and its vicinity, including 68 nationally protected species such as the Japanese Crane (*Grus japonensis*). **(Mingpao, 19/07/1999)**

• Pine forests in Anhui were attacked by a nematode which is spreading at an alarming rate of 15–30 km/year. A Pine-less belt was constructed to avoid the nematode spreading to Huangshan. This kind of nematode can destroy a 100-year-old pine within just one month. It was discovered that the nematode originated from some wooden packing materials from the USA and Japan. To rectify the situation, China announced that starting from January 2000, all imports should avoid using wooden packaging materials unless proper sterilization has been done. **(Apple Daily, 29/12/1999)**

• The forest and wildlife resources in Tibet are very rich. The total area of forest in Tibet is about 7.17 million ha with over 6,400 higher plant species and over 2,300 wild animal species. In order to conserve the vulnerable ecological environment in Tibet, several measures have been adopted by Tibet Autonomous Region Forestry Department. These measures include banning the export of logs and timber, and strictly enforcing the regional logging permit system. Moreover afforestation, planting of grasses and conservation of wild animals have been strengthened. **(Xinhua News Service, 10/03/2000)**

香港蝴蝶 (英文书)

M. J. Bascombe, G. Johnston 及 F. S. Bascombe 编著

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蝴蝶是一类极为普遍而美丽的昆虫，几乎所有的人都熟知其翅上美丽的色彩与斑纹及优美动人的舞姿，生活在偏远地区的人们或许不知道国宝大熊猫，但他们知道蝴蝶。在已知种类超过百万种并仍有许多鲜为人知的昆虫类群中，蝴蝶是目前生物多样性保护中最引人注目的类群。除拥有许多濒危物种外，蝴蝶还被用作生态系统健康状态的一项重要监测指标，并作为庞大昆虫类群的代表，帮助识别生物多样性的热点地区。

热带及亚热带地区的蝴蝶及生物多样性无论是种类还是数量远比地球上其他任何地区都更为丰富。同样，这些地区的人口密度也很高，由于毁林及土地开发导致生物多样性丧失的事件每时每刻都在发生。因此，如何保护蝴蝶及其赖以生存的生态环境，使人类与美丽的蝴蝶共存遂成为生物多样性保护的重要课题。

香港特别行政区位居我国华南地区，距我国最早以双名法命名的蝶类（林奈 Carolus Linnaeus's Systema Nature (ed. 10), A1758）产地广州不远。它以自由贸易及频繁的国际交流而闻名于世，生物多样性保护对于这一人口密集，工商业高度发达地区的可持续发展无疑是非常重要的。由于面积狭小，便利的国际交流及早期良好的工作基础，其蝶类研究远比国内其他地区先进。目前，至少有三本不同的蝶类专著问世，其中新近出版的「香港蝴蝶」是内容最新、最全面而价格最昂贵的。

作者在三页前言及致谢之后，分二部份九章记述了已知的219种蝶类及116种的幼期。第一部份为基础部份，介绍香港的概况（含气候、土地利用、植被、生物地理及毗邻地区的概况，以及蝴蝶的生物学等）；第二部份为该书的核心部份，作者系用弄蝶、凤蝶、粉蝶、灰蝶、蛱蝶五科的分类系统，依据科、亚科、族及属的先后介绍蝶类的物种多样性，每种（亚种）包括识别特征、生物学、分布范围、翅脉及雄性外生殖器特征图、成虫及幼期彩色图版，其中许多种类的幼期系初次报导。根据这些讯息，正确鉴定在该区遇到的蝴蝶将不成问题。书的附录部份为读者提供了蝴蝶的蜜源植物，寄生性天敌以及幼期的调查技术。

幼期调查是蝶类保护生物学的一个重要方面，此工作在发达国家所做较多，积累了较多资料，东南亚地区的工作相对较少。作者在书中记录的116种蝶类幼期为该书的一大特色。由于有过同样的经历，我们可以想象作者为此而付出的艰辛努力：头顶烈日，手持相机，颈胯望远镜，背负装有三角架、镜头、饲养盒、笔记本及参考书的背包，登山攀石，跨越溪流的情况；找寻幼虫或观察雌蝶产卵，记录寄主植物，忘记强烈阳光的暴晒及湿透的汗水；遇到未曾见过的幼虫或蛹，欢快的心情即刻就战胜了疲劳。即使回到室内也不得空闲，还须照看幼虫，为其清理粪便及到森林中采集新鲜的食料植物，有时为了一张照片或急于确认未记录的幼虫或蛹的身份，等待几个小时甚至直到深夜是必不可少的。

类似这样的巨著，不可避免地要出现一些未曾料到的缺限。首先，彩灰蝶属 *Heliophorus* 及环蛱蝶属 *Neptis* 中部份种类的学名需作进一步的考证；其次，书中使用的大号字体及空白空间在很大程度上增加了书的成本与厚度。此外，书中图注蝴蝶学名的格式（非斜体）与常见的学术刊物不同，如 Bull. Br. Mus. Nat. Hist. (Ent.) 及同一出版社在同一年内出版的另一蝶类巨著「巴布亚新几内亚的蝴蝶」。

尽管存在一些不尽人意之处，此书仍是已出版的东南亚地区蝶类书籍之中的优秀作品，尤其是书中既有成虫又有幼期研究，类似这样的蝴蝶书籍在世界上亦是不多的。谨此祝贺作者出版了这样一本优良的著作，它在国内将会拥有许多读者。

The Butterflies of Hong Kong.

Edited by M. J. Bascombe, G. Johnston & F. S. Bascombe,

Academic Press, 1999.

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Butterflies (Order: Lepidoptera) are familiar and beautiful insect. Almost everyone is familiar with their colourful, patterned wings and their graceful, dance-like flights. For those who live in the remote area, they may not know the Giant Panda but certainly butterflies. Among insects, in which over 1 million species are described and many more are unknown to science, butterfly is the group that receives in the highest conservation concern. In addition to the many endangered species, butterfly is an important indicator of the status of ecosystem. The group can also be used as a representative of the large insect community, and helps to identify biodiversity hotspot.

Butterflies and biodiversity in tropical and subtropical regions are richer and in higher abundance than any other parts of the world, in both species and numbers. However, as human population in these regions is dense, incidents of deforestation and urbanization leading to biodiversity loss happen everyday. Therefore how to preserve butterflies and the habitats that they depend on, so that human and butterflies can co-exist, is a pressing issue for biodiversity conservation.

The Hong Kong Special Administrative Region is located in South China where the earliest bi-nominal named butterflies in China occurs (Carolus Linnaeus's Systema Naturae (ed. 10), 1758). Biodiversity conservation is undoubtedly highly important for the sustainable development in such a heavily populated area with advanced development in industry and commerce. Butterfly study in Hong Kong is much more advanced than any other areas in China because Hong Kong is a small place, with good international interflow of information and a solid foundation in butterfly research since its early years. At least 3 different books on Hong Kong butterflies have been published. Among these, the newly published "The Butterflies of Hong Kong" is the most comprehensive, informative, and expensive one.

After the three-page Introduction and Acknowledgments, the authors present nine chapters (under two parts) dealing with the 219 recorded species and the stages of 166 of them. The first part presents the basic information, introducing Hong Kong' s climate; land use; vegetation; biogeography, its surrounding areas, and the biology of butterfliles. Part two is the core of the book dealing with species diversity. The species account is arranged according to families, subfamilies, tribe and genera under the classification system of families of Hesperiidae, Papilionidae, Pieridae, Lycaenidae, Nymphalidae. Information given under each species (or subspecies) includes diagnostic characteristics, biology, distributional range, venation, male genitalia figures, and the colour plates of adults and early stages (many plates of the early stages are illustrated for the first time). With these information, the identification of any butterflies encountered in the area will not pose a problem. The Appendices of the book supply readers with nectar sources, parasitoids and survey techniques of life cycle for butterflies.

Survey on life cycle is an important aspect in butterfly conservation. This kind of survey is more often carried out in developed countries than in Southeast Asia. A major feature of the book is the record of the early stages of 116 butterfly species. Having similar past experience, I can image the authors' hard work in getting this information. The authors had to carry camera in hands, binoculars on the neck,

and a rucksack on the back containing a tripod, camera lenses, breeding containers, notebook and reference books. With such a heavy load, they climbed up mountains, jumped across streams to look for eggs or larvae, and recorded food plants, forgetting the burning sun and their soaked clothing. When an unrecorded larva or pupa was recorded, all the fatigue would disappear at once. After returning home, they had to take care of the caterpillars by cleaning their faeces and going to the forest to collect food plants for them. It is inevitable to wait for several hours until midnight for an unrecorded pupa to become adult so the identity could be confirmed.

With such an informative book, it is inevitable for some unforeseen limitations to occur. Here I think some of the scientific names under the genera *Heliophorus* and *Neptis* have to be reconsidered in the future. Also the large fonts used throughout the book, together with the blank spaces appeared in the colour plates have greatly increased the cost and weight of the book. In addition, the font style of scientific names (not in italic) in the legends of figures is different from other popular scientific publications, such as Bull. Br. Mus. Nat. Hist (Ent.) and another great book "The Butterflies of Papua New Guinea" published by the same publishing house in the same year.

Despite these minor imperfections, this work must rate very high among butterfly books published in Southeast Asia. Similar books on butterfly is rare even on a global basis, especially containing studies on both adults and early stages. The authors are to be congratulated on producing such a wonderful book, which will certainly have many readers in China.

穆蛱蝶，摄于广西西大明山
(韦庚武摄)
Moduza procris, photo taken at Xidamingshan, Guangxi
(by Graham REEL)

燕凤蝶，摄于广西十万大山
(费乐思摄)
Lamproptera curius, photo taken at Shiwandashan, Guangxi
(by John FELLOWES/ KFBG)

维持森林生态系统的生物多样性(英文书)

Malcolm L. Hunter 编著，剑桥出版社 1999 年版
国际标准图书编号 ISBN 0-521-63768-6

书评由费乐思撰写、由林芷薇翻译

这书名正好道出我们所有人都面对的挑战，它汇聚了来自十个国家的作家，以大学生、森林科学家及森林管理员为对象，我尝试为这书作内容撮要。

第一部份包括两章绪篇，首章关于生物多样性，编辑 Hunter 尝试消除人们使用「生物多样性」一词所出现的混淆，亦提醒他人若没有彻底想清目的便将这词量化，可能导致的危机。这又引领到我们加在生物多样性的价值观问题上，有内在的，亦有帮助性的，还包括潜在价值：「由于我们并不知道生物多样性于将来的潜在价值，我们必需…留有余地，永不能说任何物种并无价值。」他继续讨论生物完整性、生态系统完整性以及可持续性等概念，然而它们的重心各有些微偏差，与生物多样性本身却没多大关连。如要维持生物完整性，应集中保留数量最多的物种，如要维持生物多样性则应保留稀有的物种。

第二章由 Seymour 及 Hunter 介绍生态森林的原理，区分方法为：「重点在于自然规律及过程：纵使经济困难或带来种种不方便，我们亦应了解这些规律及过程，与它们和谐地共同合作，并保持它们的完整性。」长久以来，维持生态完整性只著重对泥土、水质和富魅力的野生动物的尊重，直至近期才有人意识到它应包含生物区系的结构和功能。作者们在此要求作出由浅入深的研讨，以保护不同的生态系统和地貌，使大多数物种得益。他们就等级较大的地型和较小型的森林林段作出考虑。

第二部份涉及地貌等级的题目，包括物种组成的成份(第三章)、森林的动态模式(第四章)、非生物因素(第五章)、林缘(第六章)、岛屿与破碎地段(第七章)、河岸森林(第八章)及森林湿地(第九章)，这些课题全都揭示出隐藏的繁复问题。若要保留所有森林物种，就非生物因素(第五章)的影响森林管理便需要覆盖所有海拔坡度和土壤生产力。在高产量的热带森林，此类非生物因素的影响可能比生物因素的小。尽管如此，亚拉斯加雨林研究显示强风引致树木倒下的惊人重要性，这可能与我们位处的台风带息息相关。林缘(第六章)或会比森林内部地区干旱，又或出现相反情况，林缘的茂叶会带来更多水份凝固，使之更为湿润，故此它们对动植物的影响亦相对地较难预测。森林破碎化(第七章)对物种的影响不一定等同于森林被完全破坏的直接影响，虽则两种影响密不可分。作者 Yrjo Haila 亦阐明型式与过程的不同之处：较细小的林段会有较少的雀鸟种类(一型式)，但其原因究竟是破坏的森林已丧失了好些物种，或是它只能供养少些雀鸟数目？若已经失去了某些物种，是基于出生率下降、死亡率增加抑或是散布模式转变？在森林破碎化的问题上，Haila 讨论了涉及管理的事宜，并提出所有有关森林项目的问题。

第三部份以数章仔细研究较小型的林段管理，例如正在枯萎的树木、枯木和塌下的树木(第十章)、垂直结构(第十一章)、林业(第十二章)、特别物种(第十三章)及遗传多样性(第十四章)。正在及已枯萎的树木(第十章)的作用各异，两者均对森林生态极为重要。某些地区尤其致力于保存会凿洞的动物如啄木鸟，因为有很多其他动物须依赖这些树洞来生存。北美松科常绿树(*Tsuga spp.*)和其他树木的种子、树蕨及苔藓的种子都在塌下的原木上萌发。这些生态因素于种植林与天然林中同样存在(第十二章)，密集式的造林对生物多样

性的影响可能因为地貌和林段大小两方面的生态学知识运用有异而大不相同。

第四部份试图为所有渴望将理论转为实践的人作个综合，其中包括修复生态学(第十五章)、森林保护区(第十六章)、森林组织管理及政策(第十七章)、经济观点(第十八章)以及社会观(第十九章)。主要的重点是把价值观融入决策当中。管理分析(第十七章)将价值观体现为目标，使目标在实现了之后可以量度。多项有关人们如何评价高生物多样性古老森林(第十八章)的研究中，在成功量度这些价值上,都有不同的结纶，但至少认同人类对生物多样性丰富的古老森林有高度的评价。在末章， Lynn Maguire 追索持不同价值观的人对使用森林的争议，例如传统守旧的林务员相对于致力保护生物多样性的新成员，或是管理当局相对于当地居民。她呼吁公众和管理局共同参与筹划工作，其中科学家可让参与者明白不同行动所导致的后果，而公众与管理当局则共商决策。她说起来看似很凑效，可是人类总不擅于这种方法。

总的来说，此书经精心筹划而成，各章节的写作风格相当一致，在运用新词汇时，其释义都能与内文融为一体。令人震奋的更是这书能融合林业学和保育生物学。有一点要提醒大家的是在「生态学」或「生物多样性」这类词汇还没有出现时，一些林务员早已努力不懈地看顾著森林。

于我及许多读者而言，这书最大的限制是它以北温带为观点，如果把这点明说，当然不是问题，不过在概括性的篇章中对热带及亚热带的生态系统，甚至包括整个旧大陆的述郤不足够。例如， Seymour 及 Hunter 在撮写用以防止过度开发及山火的监管式林业这段含糊不清的历史时，只由欧洲中世纪开始写起，却忽略了同期在亚洲及其他地方的土著所发展的监管式系统，这些系统不少已有数千年历史，对于作者暗示这些系统是北美洲十九世纪初的新产物，我不敢苟同。同样，以多功用系统天然林垂直结构为基础的传统农林学却不获重视，实在令人沮丧。显然，科学家和林业管理员要多加关注当地知识。

老实说，或许我的要求过高。我已尽力尝试列出书中精髓，恐力有不逮。本书内容丰富，实需细心阅读。较为奇怪的是本书虽放眼全球，却独欠中国的资料。究竟是由于生态林业学的复苏概念太新，抑或我们未能将自己的成就与难处告知全世界？或许这册书有助启发读者提出问题，并思考生态林业学在研习与实践两方面的更新动力。

Maintaining Biodiversity in Forest Ecosystems.

Edited by Malcolm L. Hunter, Jr.
Cambridge University Press, 1999.
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The title of this book conveys the challenge we all face. It brings together authors from ten countries, and is pitched at graduate students, forest scientists and forest managers. I will attempt to summarise the contents.

Part I includes two introductory chapters. The first is on biological diversity. Here Hunter (the editor) tries to dispel the confusion over the usage of the term "biodiversity", and warns of the dangers of trying to quantify it without clear thinking about goals. This leads to the question of the values we attach to biodiversity, both intrinsic and instrumental, including potential value: "*In the face of all that we do not know about the potential, future values of biodiversity it is critical to...keep options alive. We can never say of any species that it lacks value.*" He goes on to discuss such concepts as *biological integrity*, *ecosystem integrity*, and *sustainability*, each of which has a slightly different emphasis than biodiversity *per se*. Managing for biological integrity might focus more on retaining the roles of the most abundant species, while managing for biodiversity would seek primarily to retain all the rare ones.

The second chapter by Seymour & Hunter introduces the principles of ecological forestry. This is distinguished by "*...the emphasis placed on natural patterns and processes: understanding them, working in harmony with them, and maintaining their integrity, even when it becomes financially difficult or inconvenient to do so.*" Managing for ecological integrity has long implied a respect for soil, water quality and charismatic wild animals. Only more recently has it been recognised to encompass the structure and functions of the biota as a whole. The authors call for a "*coarse-filter*" approach, conserving diverse ecosystems and landscapes for the benefit of most species. Here they set the scene for consideration of the larger *landscape* scale and the smaller scale of forest *stands*.

Part II covers topics at the landscape scale, with chapters on species composition (Ch. 3), dynamic forest mosaics (Ch. 4), abiotic factors (Ch. 5), forest edges (Ch. 6), islands and fragments (Ch. 7), riparian forests (Ch. 8), and forested wetlands (Ch. 9). All reveal hidden complexities. The influence of abiotic factors (Ch. 5) may call for forest management across the full gradients of elevation and soil productivity, if all forest species are to be retained. Such abiotic factors may be less influential than biotic ones in high-productivity tropical forests. Still, studies on Alaskan rainforests have revealed the surprising importance of *windthrow*, which may be relevant to us here in the typhoon belt. Forest edges (Ch. 6) may be drier than forest interiors, or conversely their denser foliage may cause more water condensation, making them wetter; their effects on flora and fauna are correspondingly unpredictable. The impact of forest fragmentation (Ch. 7) on a species is not necessarily the same as the direct impact of forest loss, though the two effects are hard to tease apart. Author Yrjo Haila also illustrates the difference between pattern and process: a smaller fragment may have fewer bird species (a pattern), but is this because it has lost some species, or just that it can support fewer individuals? If loss has occurred, is it through reduced births, increased deaths, or changes in dispersal? Haila discusses the management

implications of such fragmentation issues, and raises questions relevant to all forestry projects.

Part III examines the smaller scale of forest stand management, with chapters on dying, dead and down trees (Ch. 10), vertical structure (Ch. 11), plantation forestry (Ch. 12), special species (Ch. 13) and genetic diversity (Ch. 14). Roles of dead and dying wood (Ch. 10) are varied, and of major importance in the forest ecology. Special efforts have been made in some places to preserve the *primary cavity excavators* such as woodpeckers on which secondary tree-hole using animals depend. Seeds of hemlocks (*Tsuga* spp.) and other trees, ferns and mosses germinate on fallen logs. Such ecological influences pertain to plantations (Ch. 12) as they do to natural forests, and even intensive silviculture can vary widely in its impacts on biodiversity according to the incorporation of ecological knowledge at both the landscape and stand scale.

Part IV attempts a synthesis for those wishing to turn theory to practice. Here we cover restoration ecology (Ch. 15), forest reserves (Ch. 16), forest organization, management and policy (Ch. 17), the economic perspective (Ch. 18) and social perspectives (Ch. 19). Much of the emphasis is on incorporating values into decision-making. Management analysis (Ch. 17) involves expressing values as objectives, and enabling the realisation of these objectives to be measured. Different studies on how people value high-biodiversity old-growth forests (Ch. 18) have yield varied conclusions about the success of measuring these values, but agree, at least, that people value them highly. In the final chapter, Lynn Maguire traces conflicts over forest use to different value systems, such as those of the old-school conventional forester vs. the newcomer with a biodiversity fixation, or the management authority vs. the local population. She calls for collaborative planning with the participation of both public and the authorities, where scientists help to enlighten participants as to the consequences of different actions, and the public and authorities work together to make decisions. She makes it sound obvious, but humans don't seem to be very good at this sort of approach.

Overall the book is very well laid out, with good consistency of style between chapters, and working definitions are slipped comfortably into the flow of the text when new terms are used. The result is a vibrant fusion of forestry and conservation biology. One point to emerge is a reminder that some foresters had a stewardship ethic long before the words 'ecology' or 'biodiversity' were born.

For myself and perhaps many readers the main limitation of the book is the northern temperate perspective, which is no problem when made explicit, but some 'general' chapters give insufficient attention to tropical and subtropical ecosystems, and the Old World as a whole. For example, in summarising the murky history of *custodial forestry* (that which seeks to protect the forest from overexploitation and fire), Seymour & Hunter begin in middle-ages Europe, ignoring the remarkable parallel development of custodial systems in indigenous peoples of Asia and elsewhere. Some of these must date back thousands of years; I rather doubt the author's implication that such systems were new to North America in the 19th century. Likewise, the subject of traditional agroforestry, based on emulating the vertical structure of natural forests in multi-functional systems, is given disappointingly scant attention. Clearly scientists, as well as forest managers, need to pay more attention to indigenous knowledge.

But I am being too demanding. I have attempted to convey the essence of this book, and fear I have failed. It is too rich, and demands to be read directly. But one mystery remains. That is the conspicuous absence of the China experience in this global review. Is the revival of ecological forestry too new here, or have we simply failed to tell the world about our successes and problems? Perhaps this volume will help to inspire an increased asking of questions, and renewed dynamism in the study and practise of ecological forestry.

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Wilderness

Wilderness is the raw material out of which man has hammered the artifact called civilization.

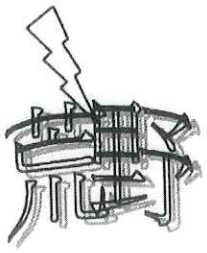
Wilderness was never a homogenous raw material. It was very diverse, and the resulting artifacts are very diverse. These differences in the end-product are known as cultures. The rich diversity of the world's cultures reflects a corresponding diversity in the wilds that gave them birth.

For the first time in the history of the human species, two changes are now impending. One is the exhaustion of wilderness in the more habitable portions of the globe. The other is the world-wide hybridization of cultures through modern transport and industrialization. Neither can be prevented, and perhaps should not be, but the question arises whether, by some slight amelioration of the impending changes, certain values can be preserved that would otherwise be lost.

To the laborer in the sweat of his labor, the raw stuff on his anvil is an adversary to be conquered. So was wilderness an adversary to the pioneer.

But to the laborer in repose, able for the moment to cast a philosophical eye on his world, that same raw stuff is something to be loved and cherished, because it gives definition and meaning to his life. This is a plea for the preservation of some tag-ends of wilderness, as museum pieces, for the edification of those who may one day wish to see, feel, or study the origins of their cultural inheritance.

Written in 1948 by ***Aldo Leopold,***
American forester and environmentalist



荒野是人类锤链文明这人工制成品的原材料。

荒野这种原材料从来也不是千篇一律的。它多采多姿，得出来的人工制成品亦十分多元化。这些人工制成品之间的差异就是各种不同的文化，而万千的世界文化正反映了孕育出他们的荒野，也有著相应的姿采。

人类在历史进程上第一次面对两个迫在眉睫的转变。第一，荒野在全球较为适合居住的地方都在消耗殆尽；其次是全球各地的文化都透过现代交通和工业化而混杂交合。虽然两者都不能避免，或者不应阻止；我们仍须回答一个问题，究竟稍微改善这两个迫在眉睫的转变，可否保存某些或会失去的价值？

对于汗流浃背的工人来说，在其铁砧上的原材料是他必须要征服的东西，就如荒野是拓荒者要对付的敌人一样。

可是，当这位工人处于安谧，抽空以哲学眼光来看他的世界，这种不无两样的原材料，在他的眼中却变成了一些值得眷恋和珍惜的东西，因为这原材料为他的生命写下定义，也带给他生命的意义。笔者谨此恳求大家保存残存的荒野，就好像保护博物馆的藏品一样，以启迪那些可能有一天希望看到、体会到、或研究自己文化遗产根源的人。

由美国林业工作者兼环境保护者
Aldo Leopold 于 1948 年撰写
由黄景愉译

报告 Announcements

1999年度嘉道理农场暨植物园生物多样性奖学金
嘉道理农场暨植物园于1999年成立生物多样性奖学金计划，此奖学金旨在帮助年轻科学家汲取在野外进行动植物调查的工作经验，增进在野外工作的知识和技巧。上年度合共收到22份申请，各申请人研究的生物多样性范围非常广泛，从基因到群落，从人造生境到天然生境的生物多样性均有涉及。获颁发奖学金的4位同学包括：中国科学院华南植物研究所的韩荣兰女士、广西师范大学的黄建华先生、华南农业大学的黄久香女士及中山大学的邹发生先生。课题包括华南真菌异养植物、广西猫儿山天牛科昆虫、华南三种木兰科植物及海南尖峰岭鸟类群落的多样性。

2000年度嘉道理农场暨植物园生物多样性奖学金
2000年度的嘉道理农场暨植物园生物多样性奖学金仍会继续提供多达7个名额给从事生物多样性调查的同学，我们已于今年1月起开始接受申请。到7月为止，共收到16份申请。如往年一样，申请者所研究的范围亦十分广泛，其中包括鸟类、森林节肢动物、森林溪流的鱼类、两栖类及爬行类等的生态或分类研究项目。我们现正挑选合适的申请者出席今年9月于广州之面试，结果将于下期公布。

来年，我们仍会继续推出生物多样性奖学金，供有志于生物多样性研究的同学申请。如欲知详情或有意申请2001年度的嘉道理农场暨植物园生物多样性奖学金，请来信或电邮索取申请表格及指引。
地址：中国香港特别行政区 新界大埔林锦路 嘉道理农场暨植物园 华南生物多样性研究队；或电邮至：
scbt@kfbg.org.hk

KFBG Biodiversity Studentship 1999
In 1999 KFBG launched a Biodiversity Studentship scheme. The primary aim of the Studentship scheme is to assist young scientists to acquire the knowledge and skills to survey plants and animals in the wild. Last year, we received 22 applications to the KFBG Studentship 1999. These cover a wide range of biodiversity topics from the genetic to community levels, in man made as well as natural habitats. The four successful candidates were selected at the beginning of this year. They are Miss Han Rong-lan (South China Institute of Botany), Mr. Huang Jian-hua (Guangxi Normal University), Miss Huang Jiu-xiang (South China Agricultural University), and Mr. Zou Fa-sheng (Zhong Shan University). Titles include: Diversity and taxonomy of Mycoheterotrophic Flowering Plants in South China; Cerambycidae (Coleoptera: Polyphaga) at Maoershan, Guangxi; Three species of Magnolia (Magnoliaceae) in South China and Bird Communities at Jianfengling, Hainan.

KFBG Biodiversity Studentship 2000
The KFBG Biodiversity Studentship for the year 2000 will again offer up to 7 studentships to students who are working on biodiversity survey in natural habitat. It has been opened for application since January 2000. Until July, we have received 16 applications. These projects are also very diverse. They include the ecological and taxonomical study of birds, forest arthropods, forest stream fishes, amphibians and reptiles etc. Recently, we are selecting the suitable candidates to attend an interview in Guangzhou at September. The result will be announced in the next issue.

Next year, we will also provide the KFBG Biodiversity Studentship to students who are interested in biodiversity survey. For those who want to get more detailed information or wish to apply for the 2001 KFBG Biodiversity Studentship, please write or e-mail to the South China Biodiversity Team, KFBG, for application guidelines and form. **Address: South China Biodiversity Team, Kadoorie Farm & Botanic Garden, Lam Kam Road, Tai Po, New Territories, Hong Kong Special Administrative Region, China; or email:** scbt@kfbg.org.hk.

广邀专家 Invitation to specialists

在下一期的*森林脉搏*中，我们将会编制一份专家名录，其中包括了对广东、广西及海南某些陆地及淡水生物有专业认识的生物学家及自然爱好者。这份名录的目的是希望确保各方专家的宝贵知识可充份用于保育工作上，同时表彰他们的专业知识。我们希望这名录能列出华南地区内专于不同物种的野外生物学家及分类学家的资料，并附其分类专业简介。如阁下有兴趣加入这名录，请把以下的资料用电子邮件、传真或邮递的方式寄给我们：

1. 名称
2. 工作机构及地址
3. 野外采集或鉴别的专门知识（不同分类单元及/或生物地理区）
4. 分类学知识（不同分类单元及/或生物地理区）
5. 具体研究经验；任何曾深入研究的分类单元
6. 对指导 (a) 理学士；(b) 理/研究硕士；及/或 (c) 博士学生的学历/资格和意愿。

In the next issue of Living Forests, we intend to produce an inventory of biologists and naturalists with specialist knowledge of particular groups of terrestrial and freshwater organisms living in the region of Guangdong, Guangxi and Hainan. The purpose of this is to assist conservation efforts by ensuring that the best use can be made of available expertise, and that the experts can, in turn, be given recognition for their valuable knowledge. We should like to list field biologists as well as taxonomists specializing in the biota of the region, with a brief summary of their taxonomic specialities. If you would like to be included in this list, please send us an email or fax or letter, with the following information:

1. Name
2. Institution, address
3. Main expertise (taxa and/or biogeographic area) in field collection/identification
4. Main expertise (taxa and/or biogeographic area) in taxonomy
5. Specific research experience; any taxa studied in depth
6. Qualification/eligibility/willingness to supervise students at (a) B.Sc.; (b) M.Sc./M.Phil.; and/or (c) Ph.D. levels.

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