



# Porcupine!

Newsletter of the Department of Ecology & Biodiversity, The University of Hong Kong

## Episode IV—A New Hope

The 3rd of December 2003 marked the fourth milestone in the history of the Swire Institute of Marine Science (SWIMS). The facility was the brain-child of Prof Brian Morton, who dictated its development for 12 years. The "stone" laying ceremony took place in 1989, with the formal opening of the Swire Marine Laboratory in November 1990. The facility was expanded in November 1994 when it was re-named the Swire Institute of Marine Science in recognition of its increased profile and importance within the SE Asian region.

Over the past 12 years SWIMS has had a great impact on marine science, both regionally and internationally. During this period it supported many different types of projects and "evolved" to meet the needs of modern marine science. With time, however, the facility struggled to meet these demands; seawater quality was poor, bench space inadequate and facilities for specialized analytical and molecular work limited. Once more the Swire family and group of companies recognized this need and, together with HKU, funded a complete refurbishment of the aquarium and laboratory. This went hand in hand with a general renovation of the external façade and residence blocks and an upgrading of the rest of the institute.

On December 3rd representatives of HKU staff, other institutions and government met to celebrate the most recent milestone. The ceremony was a relaxed affair, based around the chopping of a roast pig by James Hughes-Hallet, the Chairman of the Swire Group, and HKU's Vice Chancellor Prof Tsui. Also in attendance were Mr Andy Herdman, Mr Michael Bell and Mr Davy Ho to represent the Swire Group. As Honorary Director, I gave a short speech welcoming the guests and explaining the focus of SWIMS, to promote research into the Hong Kong's marine environment by young researchers and staff. This was followed by an informal tour of the new facilities where postgraduate students and staff explained their research work to the guests. This was really the highlight of the celebration and the guests all enjoyed chatting with the students and seeing, first-hand, how marine research is conducted. A very popular venue was the aquarium, where baby octopuses are being hand-reared and Dr Cynthia Yau demonstrated how cuttlefishes feed.

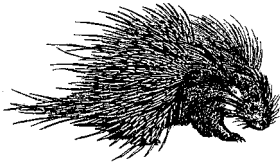
After a brief champagne toast in the Seminar Room, official guests left and staff and students got together to reflect on entering this fourth phase of the history of SWIMS. I think we all feel very confident, given the personnel at SWIMS and the new facilities, and look forward to the next few years' challenges. Many thanks to all those who were involved in the Celebration, including HKU's External Relations Office and DEB staff, but most of all a big thanks to the postgrads who were the real stars of the show!

To complete this celebration, we were delighted to welcome Sir Adrian Swire and his family for a tour of SWIMS in late December, all in all rounding off a great launch for this new era for SWIMS.

**Gray A. Williams**



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## Editorial

It is the Year of the Monkey and everywhere there are pictures of monkeys - and of gibbons, and of bizarre gibbon-monkey hybrids, with gibbon arms and a monkey tail. Gibbons aren't monkeys, of course, but apes, more closely related to us than to the macaques, which are the most widespread monkeys in China. Why this confusion between two very different native animals? The reason is both instructive and very, very sad. A millennium ago, there were gibbons throughout southern and central China. The rich kept them as pets, and both painters and poets admired their graceful movements and haunting calls. Nobody confused noble gibbons with vulgar macaques. China's population increased, forests disappeared, and gibbons became increasingly scarce. By the 17<sup>th</sup> century they were confined to the south - including, probably, Hong Kong - and by the twentieth century to the remote southwest. As gibbons retreated, painters and poets came to depend on secondhand sources and gibbons were increasingly confused with macaques, which remained widespread in China until recently. In December, I visited Bawangling and heard one of the last two groups of Hainan gibbons. Gibbon songs are targeted at rival groups kilometres away, but there is no need for this at Bawangling. The sad and lonely calls echo over across plantations where no gibbons survive to listen. No, this is not the Year of the Gibbon.

## News from DEB

With university funding in Hong Kong in a state of crisis, staff salary cuts and changes to terms-of-service, plus uncertainty of the future form and mode of operation of Hong Kong University, departmental concerns have been relegated somewhat to the back burner. And while rows about funding and a variety of other shenanigans have been occupying the attention of Hong Kong Government, biodiversity has been at the centre of a media circus. Biodiversity as represented, in this instance, by a small crocodile – a juvenile *Crocodylus porosus*. This animal, and the polluted Yuen Long creek that it (at least at the time of writing) calls home have been on TV screens worldwide, demonstrating to anyone who may have temporarily forgotten or somehow been unaware that the Hong Kong 'world city' has anything but a world-class environment. Indeed, the crocodile hunters, photographers, and government officials that have been hoping to have a close encounter with the crocodile have shown a marked reluctance to enter the waters where it lives. Pictures of tilapia gasping for air at the water surface, and the many dead fish littering the surface and banks, are indications of conditions in the creek. That aside, however, what is fueling the rush to capture the crocodile? A possible risk to human life? Unlikely. One Mrs Chan, who lives alongside the creek said, when interviewed on camera, that she liked having the animal around. Anyway, it isn't as if the crocodile is big enough to cause much harm. And given the ready supply of dead fish in its neighbourhood, there doesn't seem to be much likelihood that it will suddenly turn man-eater. That possibility doesn't seem to be keeping Mrs Chan or her family awake at night, nor does it seem to be keeping sightseers at bay. Moreover, the species isn't even exotic so that can't be used as an argument for capturing it. *Crocodylus porosus* has an extensive natural range that would once have included southern China, although it has long since been hunted to extinction in this part of Asia. Whatever its source, we could treat this specimen as the first step in a reintroduction programme for *C. porosus* in Hong Kong. There is plenty of scope for increasing local biodiversity by planned introductions of species that would have occurred here in the past. Many exotic species have become established already without any evolutionary history adapting them to conditions in Hong Kong, so the planned reintroduction of species that were formerly native and hence preadapted to local conditions would have a good chance of resulting in self-sustaining populations. This may already have happened (albeit in an unplanned manner) in the case of the Water Monitor, *Varanus salvator*. And yes, I know that *C. porosus* grows big and is potentially dangerous to humans when large, but Ferraris are big and potentially dangerous too. No one is proposing that they should be exterminated or that their importation should be banned. I think we should let the Yuen Long crocodile live, and encourage her to invite a few friends to stay.

**David Dudgeon**

# Feedback

Dear *Feedback*,

Congratulations on your excellent Newsletter. On the occasion of my first visit to Hong Kong in June, 1992, I learned from David Dudgeon that a group of naturalists was planning publication of a biodiversity Newsletter. Later, I completely forgot about these plans, but a few weeks ago I incidently found Porcupine on the Web and I am now very positively surprised to see that this Newsletter has meanwhile placed itself among the most prolific biodiversity information sources in the tropical world.

Painfully, *Porcupine!* uncovers the fact, that the exploration of the Coleoptera fauna of Hong Kong has been neglected badly in the past, although some of the most productive beetle specialists of the 19th and 20th centuries lived in Britain. It is hard to understand, why the beetle fauna of Hong Kong remained so poorly studied until recently. The lack of a Natural History Museum and purely business-minded politics may provide some explanation. When I visited Hong Kong in 1992, almost 100% of the beetles inhabiting the running waters were new to science. Although some water beetle species (see e.g., JÄCH, M.A. & JI, L. (eds.): *Water Beetles of China*. Vol. I (1995), 410 pp.; Vol. II (1998), 371 pp.; Vol. III (2003), VI+572 pp. - Wien: Zoologisch-Botanische Gesellschaft in Österreich and Wiener Coleopterologenverein) and numerous Staphylinidae have been described from Hong Kong recently, its beetle fauna generally must still be regarded as very inadequately explored.

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## INVERTEBRATES

### New record site of *Nannophya pygmaea* – in the heart of Tai Lam Country Park

by T.K.Woo  
 Senior Park Ranger  
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 Department

There has been no new published record for the smallest anisopteran dragonfly, *Nannophya pygmaea* in Hong Kong since 1996. In July 2002, a large and healthy colony of *Nannophya pygmaea* was found in the central part of Tai Lam Country Park. Over two hundred mature adults are recorded and confirmed breeding there. A further site is also reported in Luk Keng.

*Nannophya pygmaea* is only 15 mm long with a wing span of about 20 mm and was first recorded in Hong Kong by Lai (1971). It is one of the smallest dragonflies in the world (Wilson 1995). Wilson (1997) reported five sites of *Nannophya pygmaea* in Hong Kong, namely Kau Sai Chau, Pat Sin Leng, Yung Shu O, Cheung Sheung and Tai Tong. The habitats range from acidic weedy ponds to swampy marsh areas. Two new sites were reported in Tin Fu Tsai and Luk Keng in 2002. Both are swampy marsh areas of long abandoned paddy fields. Further details of the Tin Fu Tsai site are provided here.

In early July 2002, a new site was found at an abandoned paddy at about 220 metres above sea level, near the village of Tin Fu Tsai (Figs. 1 and 2), which is completely inside Tai Lam Country Park. It is about 4 km away from the nearest reported site at Tai Tong, Yuen Long.

With a total area of 1.5 hectares, the breeding site is well established. It supports a large population of *Nannophya pygmaea* and is believed to be one of the largest habitats of this species in Hong Kong. It is well-sheltered by surrounding low hills and maintained swampy almost throughout the year, making its unique environment favourable for the present colonization.

On 7 July, 2002, over 20 individuals (Figs. 3-6), with at least 4 females, were observed at the new site. They are short flyers and perch mostly on the tips of low-lying grass. Copulation and oviposition at waterlogged muddy pots were also observed.



Fig.1. Swampy site with patches of shrubs



Fig.2. The site is well-sheltered by surrounding hills

In one visit conducted at the end of July, 2002, over 200 individuals were counted. The number was considered astonishingly high for a single count.

Field staff of Agriculture, Fisheries and Conservation Department (AFCD) working at Tai Lam Country Park believe that this small red dragonfly has been living there for over a decade. They were observed during tree planting and fire fighting at adjacent areas on a few occasions.

In early April, 2003, larvae of *Nannophya pygmaea* (Fig. 7) were found dwelling on the muddy surface of the paddy at the site. Their body measured 4 mm, and they were barely visible to the naked eye. Several individuals were collected and one of them, later identified to be a female, emerged on 30 April (Fig. 8). The final instar size reached 8.5 mm. The site was re-visited on the same day and about twenty teneral males and females were found with immature colouration, showing that the emergence had just begun.



Fig.3. *Nannophya pygmaea*, adult male



Fig.4. *Nannophya pygmaea*, adult female



Fig.5. *Nannophya pygmaea*, teneral male



Fig.6- *Nannophya pygmaea*, teneral female

Observations show that mature larvae of *Nannophya pygmaea* normally began emerging in late April, continuing for months through July and with a peak in June. Adults are seen on the wing from late April to September.



Fig.7. A larva of *Nannophya pygmaea*, female

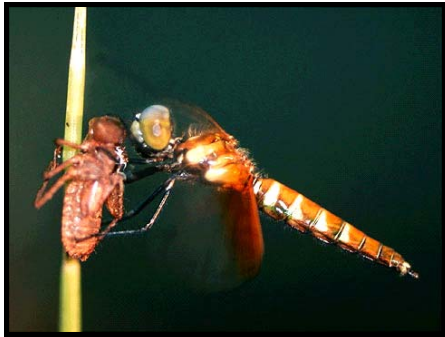


Fig.8. *Nannophya pygmaea* just emerged, female

The discovery of this site is significant for better understanding the habitat of *Nannophya pygmaea*. Importantly, this valuable habitat is totally within Tai Lam Country Park under statutory protection. This would help ensure the survival of this species within this forested park. Monitoring and further study will be conducted by staff of AFCD.

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(Photos: W.L. Hui. © AFCD)



## The China Water Beetle Survey (CWBS) – a biodiversity project of the superlative celebrates its 10<sup>th</sup> anniversary

by Manfred A. Jäch

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In 1869, the French missionary Armand David led a scientific expedition into Sichuan, central China, where he obtained the skin of a peculiar animal, which was completely unknown in the western world at that time. Subsequently, the Giant Panda, *Ailuropoda melanoleuca*, has become one of the most popular mammals on earth and serves as an international symbol for nature conservation today. Other paramount zoological discoveries of the jesuit priest, and convinced Darwinist, David include the Giant Salamander (*Andrias davidianus*) and Père David's Deer (*Elaphurus davidianus*). Europe's enormous (colonial) interest in exotic countries at the end of the 19<sup>th</sup> and beginning of the 20<sup>th</sup> century, and the news about the spectacular wildlife wealth of the mysterious Middle Kingdom eventually lured hords of naturalists into China launching the "period of the European explorers". The adventurous journeys of Sven Hedin or Nikolai M. Przhevalsky are still remembered very well. But the Japanese wars, World War II and finally the Cultural Revolution almost completely halted the exploration of the enormously manifold fauna and flora of China. Today, foreign researchers are not allowed to carry out their studies without official permission, if they intend to penetrate into remote areas.

The most comprehensive biodiversity project so far carried out in China was started in 1993, initiated by the Natural History Museum in Vienna. The "CHINA WATER BEETLE SURVEY" (this is the official name of the project) (CWBS) is based on a co-operation between the International Research Institute of Entomology (Natural History Museum in Vienna) and the Institute of Applied Ecology, Shenyang (Chinese Academy of Sciences). Although initial negotiations and short joint excursions were carried out in 1992, the research contract between the Vienna Natural History Museum and the Chinese Academy of Sciences was actually signed in 1993.

Considering the large geographical target area, the number of species involved, the duration, number of participating scientists, and the amount of publications, the CWBS may even be regarded as one of the major biodiversity projects currently run world-wide.

One of the long-term targets of the CWBS is to accurately monitor the environmental situation of China's inland waters by using coleoptera as bio-indicators. However, the first step to accomplish this nearly utopic goal must be a thorough

faunistic water beetle inventory covering the entire Chinese territory of 9.6 mio km<sup>2</sup>.

In the course of the CWBS a total of 496 sampling stations has been investigated thoroughly in the last decade (Figs. 1 & 3). Nineteen of the 33 administrative regions of China were visited: Anhui, Beijing, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hong Kong, Hunan, Jiangxi, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Sichuan, Yunnan, Zhejiang. Material from Taiwan and additional Chinese administrative regions (e.g., Macao, Qinghai, Tibet) became available through several private collections, museums, and through activities of the National Taiwan University (Chi-Feng Lee, and Ming-Luen Jeng), the Hong Kong University (David Dudgeon and his students), and the University of Macao (Emmet R. Easton).

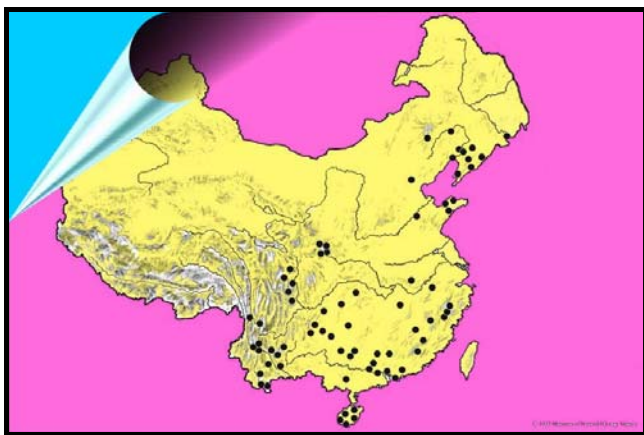


Fig. 1. Map of China showing locations of CWBS sampling stations (1992 – 2001).

The water beetle fauna of China was found to be unexpectedly diverse. Several hundred of the species collected during the CWBS turned out to be new to science! In certain provinces, 100% (!) of the representatives of Elmidae and/or Hydraenidae collected are new. The taxonomic/faunistic results of the CHINA WATER BEETLE SURVEY are largely presented in a hardcover trilogy (Fig. 2):



Fig. 2. The taxonomic/faunistic results of the CWBS are presented in three comprehensive hardcover volumes. JÄCH, M.A. & JI, L. (eds.): Water Beetles of China. - Wien: Zoologisch-Botanische Gesellschaft in Österreich and Wiener

Coleopterologenverein. Vol. I (1995), 410 pp.; Vol. II (1998), 371 pp.; Vol. III (2003), VI+572 pp.

<http://www.nhm-wien.ac.at/nhm/2Zoo/coleoptera/publications/chinaindex.html>

These three volumes include more than 1,300 pages with contributions by 50 (!) authors from 18 countries. There are many colour plates showing more than 80 top quality habitus paintings (mostly by the famous artist W. Zelenka), more than 80 habitat photographs, and lots of distribution maps. The three volumes include precise descriptions of the sampling stations, an annotated checklist of the water beetle families of the world, a key to the families of water beetles occurring in China, and numerous taxonomic revisions and descriptions of almost 200 new species (and subspecies) and nine new genera (and subgenera) of aquatic and riparian Coleoptera from China and neighbouring countries. About 200 additional Chinese species (mostly Hydraenidae, Hydrophilidae, and Elmidae) are still awaiting description by specialists. Several rare species, e.g. *Colymbetes minimus* (originally collected by Sven Hedin in 1901), *Mataeopsephus nitidipennis* (not collected since 1849!), or *Metagyrinus sinensis*, have been rediscovered. A photograph of father David's most spectacular water beetle discovery, *Hygrobia davidi*, is provided. Today, *Hygrobia davidi* is regarded as extinct globally for it has not been collected for more than 120 years. Several contributions are dedicated to larval morphology. For the first time, the habitus of a hydraenid larva (i.e. *Ochthebius gonggashanensis*) is depicted in colour. Also a first two families, Epimetopidae and Torridincolidae, are recorded from China. The discovery of an entirely new beetle family, Aspidytidae, detected in central China in 1995, is reported; *Aspidytes wrasei* is described and despite the lack of fossil evidence, we may assume that this species is something of a living fossil - a coleopterous Giant Panda.

About 70 species of water beetle occur in Hong Kong. Three genera (*Cuspidevia*, *Eonychius*, *Sinonychus*) and seven species (*Ceradryops matei*, *Cuspidevia velaris*, *Eonychius dudgeoni*, *Eulichas dudgeoni*, *Hydrocyphon dudgeoni*, *Pelthydrus dudgeoni*, *Sinonychus lantau*) were newly described in the course of the CWBS (Jäch 1995, Jäch & Boukal 1995, Jäch & Ji 1995, Kodada & Boukal 2003, Schönmann 1994, Yoshitomi & Klausnitzer 2003). Four of these new species are named after David Dudgeon reflecting the effectiveness of his field work. Several other species (especially in the Hydraenidae, Hydrophilidae, and Elmidae) are awaiting description. The water beetle fauna of Hong Kong is most interesting from a zoogeographical point of view. The degree of endemism seems to be unusually high since many of the Hong Kong species have not been detected elsewhere in China so far. Additional faunistic surveys in

neighbouring areas of Guangdong would be highly appreciated. Some of these endemic species are known only from single localities and are thus definitely of global concern: e.g. *Sinonychus lantau* (Elmidae) (Fig. 4), which was found only in a stream near Ngau Kwu Long on Lantau Island (see Jäch & Ji 1995: Fig. 9), or *Ceradryops matei* (Dryopidae) collected from a wet rocky outcrop near the parking lot at Jardine's Lookout. Other species collected in Hong Kong by early coleopterists have not been found for more than 50 years (e.g. several gyrids such as *Orectochilus severini* - see Mazzoldi 1995) and should thus be regarded as locally extinct.



Fig. 3. Streams in the tropical rain forests of Xishuangbanna (Yunnan) were found to be exceedingly diverse with regard to water beetles.

In Austria, biological water quality assessment has a long tradition. By 1968, the first map of the biological water quality of the Austrian rivers had already been published. In 1990 a national monitoring network for Austrian rivers was established with the sampling sites, frequency of investigations, parameters, and analytical methods legally fixed in the "ordinance on water quality monitoring". In 1985 and 1990 the maintenance and restoration of the ecological functioning of rivers was defined as one of the main targets for water protection in the Federal Act on Water. Besides the saprobic system an ecological evaluation using benthic bio-indicators, such as water beetles, provides the main tool to assess the ecological quality of aquatic habitats in Austria.

China, on the contrary, is still in a developmental stage with regard to biological water quality assessment. Despite the nation's tremendously rich fresh water resources, Chinese officials have largely neglected the problems of pollution and destruction of aquatic habitats caused by population growth (a fifth of the world's total population lives in China), booming economy and deforestation. However, Chinese experts have meanwhile realized the enormous threat and - in search of lasting solutions - have selected the Austrian monitoring system as a model. Hopefully, the results of the CHINA WATER BEETLE SURVEY will - in the long run - form the basis for a modern biological water quality assessment and will thus

help to protect some of the world's most diverse aquatic environments.



Fig. 4. A stream near Ngau Kwu Long produced the first record worldwide for a water beetle species new to science and known solely from Lantau Island - *Sinonychus lantau*. It represents a new genus of the Riffle Beetle family (Elmidae).

#### Acknowledgements

I thank Andrew E.Z. Short for reading the manuscript.

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## Fried water beetles

by Yvonne Sadovy

The following brief summary comes from an article by Manfred Jäch (Jäch, 2003) on the human consumption of water beetles of the genera *Hydrophilus* (family Hydrophilidae: water scavenger beetles) and *Cybister* (family Dytiscidae: predacious diving beetles). Larger water beetles are still eaten in other parts of southeast Asia.

Guangdong province is somewhat famous for the diversity, if not of remaining wildlife, then certainly of consumed wildlife. Of the many choices on offer are species from the above two genera available in markets and restaurants in much of the province. The author describes his first experience of fried *Hydrophilus*; “Surprisingly, I found the cuticula (elytra, legs, etc.) not as prickly and undeavourable as expected. In principle, one can eat the entire insect, although it is recommended to use only the relatively soft and protein-rich abdomen, which tastes vaguely like the meat of a turtle or a crocodile.....However, a strong flavor of the swampy pools and muddy puddles that are the beetles’ preferred habitat does not really help to improve their palatability.” (Jäch, 2003)

The water beetles are evidently not taken from the wild but hatched out in special nurseries; in nature, species of the genera *Hydrophilus* and *Cybister* are relatively rare in the province due to insufficient habitat for them; the author collected very few in his field surveys.

After finishing the brief summary of Jäch's article, by chance I came across a little hard-backed book entitled 'Insects as human food' (Bodenheimer, 1951). The book documents the use of insects in human nutrition from pre-history to modern man. It is a fascinating account of the *entomophagy* of a wide range of insects in many different societies around the world. The little section on water beetles, as in Jäch's article, covers dytiscid and hydrophilid beetles, reporting that they are commonly sold in Guangdong Province and in Cantonese food shops in large cities such as Beijing and Shanghai. They are reportedly used both as medicine, considered to be antidiuretic, and as confection. For cooking, the book notes, they are boiled in salt water, or fried, with the elytra, legs and other chitinous parts discarded.

Although water beetles are the most common insects to be consumed, other insects were also noted by Bodenheimer as being eaten within China, and especially in the south. These included several species of cicadas, especially in the nymphal form, cockroaches, and various beetle, dragonfly and wasp larvae.

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## VERTEBRATES

### First record of the estuarine goby *Eutaeniichthys gilli* Jordan & Snyder, in Hong Kong

by Andy Cornish

During the sandy shore day of the annual 1<sup>st</sup> year undergraduate field trip to Sai Kung, Dr Kenny Leung's group of students discovered an elongate goby at Starfish Bay. The fish, which was buried under sand well above the tide level has been identified as *Eutaeniichthys gilli*, a goby noted from Japan as inhabiting the tide pools of estuaries under stones (Masuda *et al.* 1984). It presumably has special adaptations that allow it to survive for extended periods buried in wet sand. The discovery of this species in Hong Kong represents a significant range extension for this species, which in addition to Japan is only known from the Yellow Sea in China (Huang 2001).

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Fig. 1. *Eutaeniichthys gilli*

### Macaques as seed predators and dispersal agents in Hong Kong

by Richard T. Corlett

The macaques are the youngest and most successful of the major evolutionary radiations of non-human primates, which perhaps explains why they so often seem to behave like unruly teenagers. Their recent arrival in the Asian region means that there has probably not been enough time for plants to evolve specific adaptations for seed dispersal by macaques, or specific defenses against seed predation by them. The



ground beneath a fruiting tree after a troupe of macaques has left tends to look like the aftermath of a wild and drunken party, and it is difficult to ascertain whether the net effect on the tree has been positive or negative. Macaques in the frugivore-rich forests of Southeast Asia are arguably eating fruits that would have been better – from the plant’s point of view - left for a kinder, gentler and more effective dispersal agent. Where the diversity of frugivores – particularly large frugivores – has been reduced by isolation or hunting, however, macaques may be the only seed dispersal agents for some plants (Lucas & Corlett 1998).

Hong Kong is well within the natural range of the Rhesus Macaque, *Macaca mulatta*, but as far as can be determined, this species was locally extinct by the nineteenth century and all macaques in Hong Kong today result from introductions that apparently started around 1915 (Wong 2001). The majority of the approximately 1200 macaques are *M. mulatta*, but there have also been releases of a closely related Southeast Asian species, the Long-tailed Macaque, *M. fascicularis*, which has hybridized with *M. mulatta*, and a few individuals of several other species. Macaques are the largest frugivores in modern Hong Kong, so their impact on the plants they eat is of considerable importance.

The macaques are the most omnivorous of primates, but studies of diet in relation to food availability have shown that they prefer to eat fruit when it is available (e.g. Lucas & Corlett 1991; Hanya *et al.* 2003). Indeed, when fruit is in surplus supply they hardly eat anything else. Clearly, omnivory in macaques is imposed, not chosen. Frugivorous primates usually consume only the fleshy part of the fruit, so the seeds, which are hard and often poisonous, are an unwanted waste product. The fruit-eating Old World monkeys (Cercopithecinae), which include the African guenons and Asian macaques, have well-developed cheek pouches. These are used to hold excess fruits, which are then returned one at a time to the mouth for processing, with the larger seeds being dropped or spat out and only the smallest ones (< 3-4 mm diameter) swallowed (Corlett & Lucas, 1990). This allows these monkeys to harvest many fruits quickly and process them more slowly as they move between fruiting trees. Most other primates lack cheek pouches and swallow most seeds. This also permits rapid harvesting, but has the disadvantage that indigestible seeds can make up large proportion of the material in the gut at any one time. Both seed-processing strategies seem to work equally well for the primates, but may have very different consequences for the plants whose fruits they consume.

Macaques drop and spit many seeds under the parent tree while feeding, but they also carry some fruits away in their cheek pouches and spit out the seeds one by one as they move through the forest. Seeds that are swallowed by macaques and other primates, by contrast, end up in the faeces, usually a long way from the fruiting tree. In large primates, such as the macaques, large numbers of seeds may be deposited in a clump, particularly if they defecate on the ground or from a low branch. Some smaller primates, however, such as the Neotropical tamarins, defecate large seeds singly and small

seeds in small clumps, while the faeces of canopy primates, such as gibbons, often shatter before they reach the ground.



Fig. 1. Macaque mother and baby (Photo: Laura Wong)

The macaques in Hong Kong eat a huge range of fruit species (Fellows 1992; Corlett unpublished), many of which are probably better dispersed by birds (e.g. *Bridelia tomentosa*), fruit bats (e.g. *Ficus fistulosa*) or civets (e.g. *Diospyros morrisiana*). In some fruits, however, the edible part is protected by a thick, resinous outer peel, which is difficult to remove without the coordinated use of hands and teeth. A tree, *Garcinia oblongifolia*, and a large climber, *Melodinus suaveolens*, are the commonest examples of such fruits in Hong Kong. The monkeys remove part of the peel with their incisors while holding the fruit in their hands. They then scoop out the flesh and seeds with their teeth and discard the rest of the peel. The seeds are spat out individually after separation from the fruit pulp in the mouth. These single seeds can often be found a long way from the nearest possible parent plant.

The potentially beneficial impact of macaques as seed dispersal agents – however inefficient – is only part of the story. In addition to dropping, spitting or swallowing intact seeds, the Hong Kong macaques also chew up and destroy many. Most of the seeds they destroy are either from unripe fleshy fruits or from ripe, non-fleshy fruits, including wind-dispersed species and members of the oak family, Fagaceae. A large aggregation of macaques in a fruiting tree in Hong Kong is, more often than not, destroying a crop of acorns (*Lithocarpus* spp.) or chestnuts (*Castanopsis* spp.). Fagaceae fruits seem to be a preferred food of all macaque species wherever they are available, and they are a life-maintaining staple for part of the year at several of the more northerly sites (Lucas & Corlett 1998). These fruits have to be edible, since they depend on scatter-hoarding rodents for their dispersal (Xiao *et al.* 2003). Their only defense against seed predators is a tendency to mast, i.e. produce very large crops at multi-year intervals. Only in the mast years, when the crop is superabundant, do many fruits survive to grow into seedlings.

Is the overall impact of macaques on Hong Kong’s flora positive or negative? We do not have enough evidence to say

for sure. I suspect it is negative at the sites where macaques are maintained at unnaturally high densities by artificial (and now illegal) feeding. In these areas, a lot of fruit is eaten – or just bitten and discarded - before it ripens, apparently out of boredom. In areas where both diet and density are more natural, such as at Tai Po Kau, the macaques are probably benefiting some species and damaging others, much as they would have done before humans arrived. It is striking, however, that even plants with obvious “primate fruits”, like the *Garcinia* and *Melodinus* mentioned above, appear to be doing fine on Hong Kong Island and Lantau, where there have been no wild primates for at least 160 years. There is a PhD project in this for somebody!

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## Piranha = man-eating fish?

by Cheung Sze Man

Piranha 食人魚 refers to some of the members of the subfamily Serrasalminae (Family Characidae, Order Characiformes). In the Tupi-Guarani language, *pira* means fish and *ranha* refers to teeth (Schleser, 1997). Some sources (e.g. Schulte, 1988) state that the word ‘piranha’ means scissors. Native to the Neotropics, most piranha species can be found in the Amazonia and Orinoco River Basins. They thrive in big rivers, swamps and estuaries. Piranhas are notorious for their cruel feeding habit but most rumors of their fierce behaviour are very much exaggerated while they do attack injured animals crossing rivers, some piranha species only feed on invertebrates, fish fins and fruits dropping from overhanging riparian plants.

Although most heart-breaking rumours on piranhas are untrue, we should never ignore their impact on the ecosystem when they are introduced to places out of their natural ranges. Exotic piranhas may compete with native fauna for available space and food resources and they may also prey on indigenous fish and break the balance of the ecosystem. Apart from ecological impacts, released piranhas a bite cleaners

during pond maintenance work (e.g. 29 September 1998 Ming Pao and 01 December 1998 Sing Tao Daily).

Because of such concern, in some parts of the world regulations have been implemented to restrict or even ban the import/export and possession of piranhas, especially the Red-bellied piranha (*Pygocentrus nattereri*). Over 20 states in the US ban the keeping of piranha and in some states even scientific organizations need to apply for possession permits. A hot debate has been stirred up by the mass media in Mainland China since November 2002 on whether the keeping of piranha should be banned. This debate urged the Mainland Central Government to issue an emergency notice to stop the importation and possession of piranhas. All the *P. nattereri* in the market had to be confiscated and all the stocks/exhibition in zoos and public aquariums had to be destroyed by fisheries officers.

On 27 August and 19 September 2003, I visited two of the largest wholesale markets in Guangdong: Qingping and Huadiwan pet markets and Qingping food market at Guangzhou. I also conducted a survey at Dongmen market and neighboring aquarium shops at Shenzhen on 03 December 2003. The results from all 3 visits for both pet and food markets at Guangzhou and Shenzhen showed that no *P. nattereri* were being sold. Only approximately 20 individuals of phytophagous serrasalmin silverdollar *Myleus* spp. were found at a single shop at Huadiwan pet market at Guangzhou and a single pacu, *Piaractus brachipomus*, was recorded in an aquarium shop at Shenzhen.

Pretending to be a potential customer, the author asked the aquarium shopkeepers about the sale of piranhas. All the respondents independently expressed that they did sell a certain amount of piranhas before the implementation of the regulation but now hardly dare to do so because of the heavy punishment (CNY \$ 50,000 maximum fine for selling any piranhas; note that the average annual wage of staff and workers per capita in urban areas of Guangdong in year 2002 = CNY \$ 17,500; National Bureau of Statistics of China Website, 2003; US \$1 = CNY \$8.28). Moreover neither the profit of selling piranha, nor demand for piranha, are very high, unlike the profitable arowana trade that can still power a huge underground black-market. Several freshwater food fish stall owners said that they did not need to take the risk since they could offer a lot of other fish species to their customers. These observations from the three visits to Guangzhou and Shenzhen did not imply that there would be no more piranhas in the markets, but at least people in the Mainland China have become well aware of the implementation of the regulation.

In Hong Kong, piranhas are still occasionally found in both aquarium shops and food markets. In the past three months (September to November 2003), *Pygocentrus nattereri* was recorded in at least 15 aquarium shops distributed in the New Territories and Kowloon. Usually each shop selling *P. nattereri* keeps a supply of around 10-15 individuals (2 cm-25 cm TL) at any one time. Other serrasalmins were also recorded in small quantities, including *Myleus rubripinnis*, *M.*

*schomburgkii*, *Piaractus brachypomus*, *Pygocentrus piraya*, *Serrasalmus spilopleura*, etc.



Fig. 1. A piranha in an aquarium tank

Piranhas have become less and less common in local food markets in recent years but some freshwater fish stalls in the New Territories always stock around 10 individuals of piranhas for sale (20-30 cm TL). When asked about the origin of the fish, some shopkeepers told the author that they were from the Mainland China, and some were even said to be wild-caught from the countryside of Hong Kong!

In the past few years, I have also recorded some sightings of piranhas (Table 1). In August 2001, I witnessed several women releasing 3 adult piranhas (around 30 cm TL) into Kowloon Reservoir for religious purpose. They said the red colour of the red-bellied piranhas could bring them good luck. All my records so far have been recorded from reservoirs and man-made ponds in a town park. The piranha issue in Mainland China raised the question regarding whether controls on the import and possession of piranha are also needed in Hong Kong. As studies such as Bennett *et al.* (1997) have shown that tropical *P. nattereri* cannot withstand temperatures < 10°C, it is suspected that piranha may not survive through the winter in Hong Kong. Although *P. nattereri* is renowned for their aggressive behaviour, scientific evidence on their actual impact on the natural ecosystem is scant. This does not imply that piranha pose no harm to native fauna but rather stresses the need for further field observations and experiments to determine the cold tolerance and ecology of exotic piranha in Hong Kong. In fact, phytophagous serrasalmins such as *Myleus* spp. and *Piaractus brachypomus* are good aquarium and food fish.

Relevant government departments should consider whether regulations should be imposed to either ban the whole subfamily Serrasalminae, or just ban the true piranha (*P. nattereri*). In the long-term, government departments and the scientific community should raise the awareness of the general public on the environmental consequences of irresponsible disposal of aquarium fish. Putting unwanted predatory exotic fish (as in the piranha case) to sleep by freezing or using tranquilizer is not a good thing to have to do, but at least causes less harm to native fauna and the

environment. Communication with religious organizations can help to spread the message on the negative impacts brought about by releasing exotic animals. In addition, we should analyze perceived information objectively and scientifically, including those from the mass media, in order to make reasonable and effective strategies to prevent and tackle the invasive species problem.

I thank Rita Yam and Winnie Man for assistance in the market surveys.

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**Table 1. Sighting records of Red-bellied piranha *Pygocentrus nattereri* in Hong Kong in the past three years (2001-2003)**

Date	Site	Remarks
June 2001	Shing Mun Reservoir (50Q KK 06 77)	Four fish (approx. 30 cm TL)
August 2001	Shek Lei Pui Reservoir (50Q KK 06 75)	One fish (approx. 20 cm TL)
August 2001	Kowloon Reservoir (50Q KK 07 75)	Three fish of approx. 30 cm TL being released by people
May 2002	Tuen Mun Town Park (49Q HE 06 79)	Two dying fish (20 cm TL)
November 2002	Plover Cove Reservoir (50Q KK 16 91)	A dead fish (32 cm TL) lying on a nearby path

## Bat Pollination in the Climber *Mucuna birdwoodiana*

by Michael Lau

On 4 and 5 April, 2003, I saw several Leschenault's Rousette Bats, *Rousettus leschenaulti*, visiting the flowers of *Mucuna birdwoodiana* in a forest near Sheung Yeung Village in Clear Water Bay and this is probably the first local record of bat pollination of this climber. The large number of robust, drab but pungent flowers in long pendant racemes produced by this plant seem to be specially adapted to attract fruit bats. Plants of the genus *Mucuna* occur in tropical America, Africa, Asia and Australia and they are considered to be bat pollinated

(Dobat & Peikert-Holle, 1985). Those in the neotropics are pollinated by glossophagine bats and they have raised, concave, vexilla which reflect the echolocation of the bats and make them especially conspicuous to the pollinators (von Helversen & von Helversen, 1999). The Old World Megachiropteran fruit bats lack such an advanced echolocating system. The vexilla of the flowers of *M. birdwoodiana* are, as expected, not raised.

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# *Rattus sikkimensis* occupies bird nest box on Kau Sai Chau

by Thomas D. Dahmer

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## Introduction

Kau Sai Chau is an island of 6.7 km<sup>2</sup> area near Sai Kung in northeast Hong Kong. The northern third of the island was developed by the Hong Kong Jockey Club in 1994-5 as Hong Kong's first public golf course. Mammalian species on the island have been recorded since 1993 for an environmental impact assessment and subsequent monitoring studies. This note reports the results of one monitoring session carried out in October 2003 to identify a mammal that occupied a bird nest box installed some 6 months earlier. Eleven bird nest boxes were installed in trees at Kau Sai Chau in April 2003 with the objective of providing habitat for cavity-nesting birds. During monitoring of the nest boxes it was noted that one contained wood shavings and various fruits that had been gnawed to access seeds. It was evident that the box was occupied by a mammal rather than a bird.

## Methods

Mammals have been monitored on Kau Sai Chau by visual survey for animals, their sign, or remains; live-trapping using Sherman® aluminium live-traps, locally made wire-mesh rat-traps and Tomahawk® live traps; spot-lighting; and photography using camera-traps. Camera-traps were used to identify the unknown mammalian occupant of the nest box. The camera-traps were assembled from Model 550 TrailMaster® passive infrared monitors and Canon A1/Prima

AS-1 SureShot® automatic cameras suitable for use on land or in water. Monitors were set at a pulse sensitivity of 3 (3 infrared pulses required to record an event; approximately 0.05 seconds/pulse or 0.15 seconds in total) and a pulse interval of 4 seconds (maximum time interval for recording the 3 pulses). Event delay (time delay between recorded events) was set at 30 seconds. Camera delay (time lag between photographs) was set at 30 seconds. Cameras were set on full-time flash mode. Two cameras and two monitors were used at the nest box site. Cameras were loaded with 35 mm 400 ASA Kodak® print film, and the negatives were later digitized using a Nikon CoolPix® 995 digital camera and digitizing adapter. Camera-traps were deployed because it was considered possible that the unidentified species using the nest box was a new rodent species for Kau Sai Chau and might not be captured in conventional rodent live-traps.

## Results

Mammals recorded before and after construction of the golf course are listed in Table 1. All three rodent species had been live-trapped and identified prior to the camera trapping session in October 2003. However, prior to October 2003 no tree-dwelling mammals other than bats were thought to occupy the island.

Photographs taken within 4 days of installation of the camera-traps are shown as Figures 1 and 2. The occupant of the nest box was determined to be *Rattus sikkimensis* (Wilson and Reeder 1992; *R. remotus* per Corbett and Hill 1992), a common rat species in Hong Kong (Chung 2003). No other species was photographed entering or leaving the nest box during the initial 5-day trapping session or during a 6-day session that begun one week later. This was the first recorded instance of tree nesting by any *Rattus* species on the island.

The tree supporting the nest box was a *Schefflera heptaphylla* of approximately 25 cm diameter at breast height. The nest box was installed with the entrance at 3.5 m above the ground surface. The surrounding habitat was a 3-4 ha mixed species stand of mainly broadleaved evergreen woodland approximately 20-25 years in age that was left undisturbed during construction of the golf courses. The canopy was dense enough to enable rats to move between trees along branches rather than by descending to ground level. The nest box was filled to a depth of some 10 cm with shavings, shreds, and other bits of wooden material brought in from outside.

The TrailMaster® passive infrared monitor proved useful in this circumstance because its sensitivity could be adjusted to maximize the probability of sensing a small mammal suspected to be capable of rapid movement in and out of the range of the sensor. Camera-trapping proved a useful method for species identification in this case because: (i) although the species was unknown, its area of activity (nest box) could be readily identified and targeted; (ii) the risks of theft or vandalism of equipment were considered low; (iii) photography of the subject at a tree nest was considered more probable than capture by live-trapping.



Fig. 1. *Rattus sikkimensis* at nest box entrance on 18 October 2003 at 0219 hrs (entrance diameter = 7 cm).



Fig. 2. *Rattus sikkimensis* at nest box entrance on 20 October 2003 at 2333 hrs (entrance diameter = 7 cm).

### Acknowledgements

Mammal observations were often reported by personnel at The Jockey Club Kau Sai Chau Public Golf Course Ltd. Their cooperation and assistance are greatly appreciated. Studies reported here were funded by The Jockey Club Kau Sai Chau Public Golf Course Ltd., whose support is gratefully acknowledged. The Agriculture, Fisheries and Conservation Department (AFCD) of the Government of Hong Kong Special Administrative Region authorised permits for live-capture of wild animals. This support is gratefully acknowledged. Kylie Chung, Department of Ecology and Biodiversity, The University of Hong Kong, confirmed the identification of *Rattus sikkimensis*. Her contribution and that of her supervisor, Dr. Richard Corlett, are gratefully acknowledged. This note is dedicated to the memory of Stephen Jay Gould, who believed, as does the author, in the heuristic value of unforeseen outcomes.

**Table 1 Mammals recorded on Kau Sai Chau from May 1993 through October 2003.**

Pre-Construction Records - May 1993 to May 1994			
Class, Order, Family	Common Name	Scientific Name	Year First Recorded
Carnivora, Canidae	Feral Dog	<i>Canis familiaris</i>	1993
Carnivora, Viverridae	Small Indian Civet	<i>Viverricula indica</i>	1993
Artiodactyla, Suidae	Wild Boar	<i>Sus scrofa</i>	1994
Rodentia, Muridae	Norway Rat	<i>Rattus norvegicus</i>	1994
Post-Construction Records - July 1995 through October 2003			
Order, Family	Common Name	Scientific Name	Year First Recorded
Chiroptera, Rhinolophidae	Himalayan Leaf-nosed Bat	<i>Hipposideros armiger</i>	2000
Chiroptera, Vespertilionidae	Pipistrelle	<i>Pipistrellus</i> sp.	2000
Carnivora, Canidae	Feral Dog	<i>Canis familiaris</i>	1995
Carnivora, Viverridae	Small Indian Civet	<i>Viverricula indica</i>	1993
	Masked Palm Civet	<i>Paguma larvata</i>	2001
Artiodactyla, Suidae	Wild Boar	<i>Sus scrofa</i>	1996
Rodentia, Muridae	Norway Rat	<i>Rattus norvegicus</i>	1994
	Lesser Ricefield Rat	<i>Rattus losea</i>	2000
	Sikkim Rat	<i>Rattus sikkimensis</i>	2000
Rodentia, Hystricidae	Chinese Porcupine	<i>Hystrix hodgsoni</i>	2002

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This column aims to introduce interesting species of Hong Kong flora and fauna that might be encountered during fieldwork. Distinctive physical characteristics and some interesting ecological facts are included for each example.

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### Black-faced Spoonbill *Platalea minor* by Y. T. Yu

Black-faced Spoonbill *Platalea minor* is one of the well-known animals in Hong Kong. It is famous for its rarity and for being promoted as a flagship species for wetland conservation by both government departments and NGOs.

In Hong Kong, two species of spoonbills are found wintering along the coast in the northwest New Territories, Eurasian Spoonbill *Platalea leucorodia* and Black-faced Spoonbill *Platalea minor*. The Black-faced Spoonbill is endemic to East Asian coastal areas, while the Eurasian Spoonbill can be found from Western Europe coasts across to the east coast of Asia. They look similar but can be easily identified through detailed observation have different shapes of bare skin on the face. Black-faced Spoonbill has a bigger and blacker bare skin and is also smaller in size. In winter, over 100 individual Black-faced Spoonbill are present in and near Mai Po and Inner Deep Bay area, but fewer than 10 individual Eurasian Spoonbill are present over the winter.

The known global population of the Black-faced Spoonbill is 1069 individuals (Yu 2003) and the peak count in Hong Kong was 258 birds in December 2002 (P. J. Leader unpublished data). Therefore, Hong Kong has a maximum of 24% of the world's population of this species. There is no doubt that Hong Kong is one of the most important sites for this species. The largest congregation site of this species is in Taiwan where over 500 birds are present over the winter. It is very susceptible to disturbance, as is any species which has a large population depending on a few sites. In winter 2002/2003, an outbreak of avian botulism at the Taiwan site killed a total of 73 Black-faced Spoonbills (about 7% of the global's population) and at least four Black-faced Spoonbills were found dead from botulism in Hong Kong in previous winters.

Besides botulism, the Black-faced Spoonbill is facing other threats in its range. East Asia is one of the regions with the

most rapid growth of economy that causes an expansion of human population and cities in the region. Many Black-faced Spoonbills' habitats have been reclaimed for development. The increase in human population also causes more disturbances, both in breeding and wintering sites. The situation in Hong Kong is better than in Mainland China and elsewhere, however. The set up of Mai Po Marshes Nature Reserve and the Mai Po Inner Deep Bay Ramsar site provides the best on-site protection of this species. However, although the main feeding area of the Black-faced Spoonbill is the intertidal mudflat in Deep Bay, the area of the mud flat is decreasing from silt accumulation and the spreading of mangrove trees. Development pressure still exists in the fishpond area near Mai Po and Deep Bay, where there is an additional feeding site. These existing threats to the Black-faced Spoonbill result in this species still being listed as 'Endangered' under the IUCN criteria (BirdLife International 2000).

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Fig. 1. Black-faced Spoonbill

### Hong Kong Hollies by Anita Tsang

The genus *Ilex* L., commonly known as hollies, contains more than 600 species of trees and shrubs distributed in tropical, subtropical and northern temperate regions. Some species are commonly used as ornamental plants at Christmas, such as the European *Ilex aquifolium*, while others are used in medicine or to make tea. The leaves of *Ilex paraguayensis* are used to make the popular maté tea of South America.

The genus is entirely dioecious, with separate male and female individuals. In Hong Kong, *Ilex* is the second largest

woody plant genus (after *Ficus*), with 14 native species: *Ilex asprella* and *I. pubescens* are shrubs and are very common in shrublands and forests; *I. championii*, *I. cinerea*, *I. ficoidea*, *I. graciliflora*, *I. memecylifolia*, *I. rotunda* and *I. viridis* are trees and are common in shrublands and forests; *I. lohfauiensis* is a shrub restricted to montane shrublands and forests; *I. chapaensis*, *I. dasyphylla*, *I. lancilimba* and *I. kwangtungensis* are rare forest trees.

The flowers of *Ilex* are small and male plants produce more flowers than female plants. *Ilex dasyphylla*, *I. lancilimba* and *I. kwangtungensis* produce pink flowers; *Ilex pubescens*, *I. lohfauiensis* and *I. viridis* produce white to pink flowers; *Ilex cinerea* produces greenish-yellow flowers; the others species all produce white flowers. *Ilex ficoidea* flowers first in February, followed by most other *Ilex* species from March to May. *Ilex lohfauiensis* flowers last in June. Only *I. ficoidea* and *I. memecylifolia* produce fragrant flowers. Honey bees, *Apis cerana*, are the commonest flower visitors on *Ilex* species in Hong Kong.

*Ilex asprella* and *I. viridis* produce black fruits, *Ilex chapaensis* produces green fruits, while all the others produce red fruits. *Ilex asprella* is the only summer-fruiting species, all other *Ilex* species fruit in winter. Some fruiting *Ilex* species are very conspicuous, like *I. cinerea*, *I. rotunda* and *I. pubescens*. The *Ilex* fruit is a bacco-drupe with pyrenes inside. A bacco-drupe is a berry-like drupe containing one or more seeds, each enclosed within a stony endocarp; a pyrene is the stone of a drupe, with the seed surrounded by hard endocarp (Hu, 1950). The fruits are eaten by seed-dispersing birds, except those of *I. chapaensis*. The very large green fruits of this species are eaten by civets and, probably, fruit bats.

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## Kadoorie Farm & Botanic Garden - Wildlife updates & sightings

by Gary Ades

Wildlife recording, surveys and rehabilitation at Kadoorie Farm & Botanic Garden (KFBG) have produced a number of interesting and unusual records since August. In this report, KFBG staff provide some of the highlights of their findings.

General wildlife sightings are posted on the KFBG Wildlife Sightings Board on a fortnightly basis, with records provided by KFBG staff and visitors. Most records tend to be generated by the KFBG Security team on night shifts, the monthly Night Safari activity and regular surveys by the Fauna Conservation Dept. staff. All records will soon be databased to investigate any possible patterns of habitat use by fauna on our hillside.

### (1) The following sightings records were posted between August and November, 2003:

#### August

5 August, 5.10pm; Scarlet-backed Flowerpecker (*Dicaeum cruentatum*), near tropical plants house - adult female with 3 juveniles begging for food.

23 August, (Night Safari) 7.30 pm; Japanese Pipistrelle Bats observed hunting insects, and picked up at 46KHz on bat detectors, over the Butterfly Garden; 8:30 pm - still a few fireflies along the stream at the Fern Walk.

27 August, p.m.; Many-banded Krait hatchling found outside the Admin. Office.

29 August; a male Macaque seen outside the Conservation Office.

#### September

1 September, 4 pm; at least 5 Birdwing butterflies (*Troides helenus* and *T. aeacus*) flying around the Butterfly Garden.

3 September; Small Indian Civet at Signpost Corner.

6 September; Bamboo Snake at Native Tree Nursery.

8 September; Cobra near Helicopter Pad.

10 September; Atlas Moth (mating pair) at Parrot Sanctuary.

12 September; Muntjac (Barking deer) heard, below Kwun Yum Shan and near Post Office Pillars.

12 September; Porcupine seen on road above Post Office Pillars.

12 September; Wild boar seen on road above Post Office Pillars.

13 September; Barking deer above Post Office Pillars.

15 September; Porcupine at Apiary.

24 September; Burmese Python near T.S.Woo pavilion.

29 September; Woodcock below Twin Pavilion.

## October

5 October; Black-naped Oriole, (two individuals) at Kwun Yum Shan summit.

24 October; Big-headed Terrapin, Magnolia Reservoir.

25 October; 2 Ferret-badgers playing near Orchid Haven; 2 Porcupine at Raptor Sanctuary, unidentified species of Nightjar hawking for insects at dusk, summit of Kwun Yum Shan; Japanese Pipistrelle Bats above Upper Canteen; Himalayan Leaf-nosed Bats (*Hipposideros armiger*) hunting airborne invertebrates below TS Woo Pavilion; fireflies evident after dusk at the top of Kwun Yum Shan and at Great Falls.



Fig. 1. Juvenile Chinese Porcupine; family groups of porcupines have been seen regularly at KFBG in 2003.

## November

21 November (evening / night); Wild boar, Leopard Cat and Small Indian Civet - upper Farm tangerine terraces; HK cascade frog - stream pool near Orchid Haven; Big-headed Terrapin x 3, Lesser Spiny frog, Anderson Stream Snake x 3 - stream above Magnolia Reservoir; HK Newt - stream near Fern Walk.

22 November (Night Safari); Porcupine (2 adult, 2 sub-adult) (Fig. 1) on road beneath summit of Kwun Yum Shan; Porcupine (one adult) above Boulder Lodge; Fire-fly larvae (=glow-worms!) at Magnolia Reservoir, by stream at Orchid Haven, Fern Walk and below Butterfly Garden.

### (2) Kadoorie Farm & Botanic Garden – Fauna Department Project News

Roger Kendrick: **The monthly moth survey** has increased the number of moth species recorded at KFBG to at least 1,146 as of 23 November (Fig. 2). The latest new record (22 Nov 2003, Butterfly Garden, at a mercury vapour light trap) is of a

species of *Yponomeuta* (Yponomeutidae) - a small ermine moth, which is also new to Hong Kong.



Fig. 2. Indian Moon Moth (*Actias selene*); one of the more than 500 moth species recorded at KFBG between August and November 2003.

### Paul Crow: **Artificial bat roosts for insectivorous bats at KFBG**

KFBG currently has a total of 21 artificial bat roosts of 4 different designs installed on site. The boxes are all between 1-2 yrs old and as yet have not attracted a significant level of occupancy, however that is not to say they are not utilized. Our most successful design to date was our “first draft” which was our simplest design based upon principles laid out by Bat Conservation International and reference design laid out in “The Bat House Builder's Handbook” 1993 Merlin Tuttle and Donna Hensley.

The first design was recorded as housing up to 5 head of Japanese pipistrelle (*Pipistrellus abramus*) in a box at any one time and up to 11 bats at one time between all four roosts of that design. Unfortunately this box design was not resilient enough to last in the Hong Kong climate, being constructed only of Plywood and later upgrades have as yet failed to attract the same response from our local bats.

Other designs in use include a “Bat Condo” designed to offer housing to larger numbers of bats and prefabricated “Woodcrete” boxes designed to be built into permanent brick or concrete structures.

In many temperate countries, artificial roost structures for bats are well researched and are recognized as a valid conservation measure for some species. By putting different designs through trial, we hope to find those most appropriate for use in Hong Kong which may have value in mitigating loss of existing bat roost sites (Fig. 3). Plans exist in the future to test larger scale roost designs.





Fig. 3. A selection of artificial bat roost designs currently on trial at KGBF.

### (3) Wild Animal Rescue Centre (WARC) - update

The months leading into the winter season are always a particularly busy time for the WARC team. During the winter migration, many birds arrive at our centre in a thin, weak state and in need of respite, especially young birds making the trip for the first time. Others travelling through our city at night are disorientated by our huge, illuminated tower blocks, often suffering concussion, even fractured bones.

However, life at a rescue centre is never dull. Exciting animals received during this period include a new species for our centre a Band-bellied Crake, the third record of this species for HK and the first live specimen (Fig. 4).

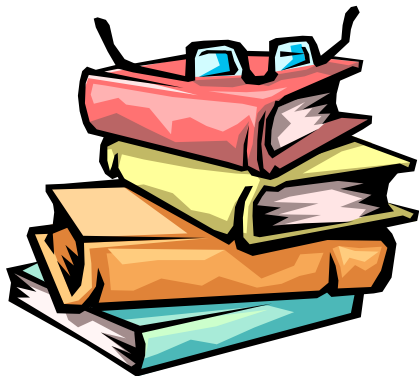


Fig. 4. Band-bellied Crake.

Below is a list of just a few of the animals received over the last few months that have been **successfully rehabilitated and subsequently released**.

SPECIES	LOCATION FOUND	RELEASE DATE	RELEASE LOCATION
<b>RAPTORS</b>			
Collard Scops Owl ( <i>Otus lempiji</i> )	Unknown	20.09.03	KFBG
Collard Scops Owl ( <i>Otus lempiji</i> )	Aberdeen	20.09.03	KFBG
Collard Scops Owl ( <i>Otus lempiji</i> )	Peel Rise	25.10.03	KFBG
Collard Scops Owl ( <i>Otus lempiji</i> )	Mui Wo	25.10.03	KFBG
Collard Scops Owl ( <i>Otus lempiji</i> )	Quarry Bay	13.10.03	KFBG
Black Eared Kite ( <i>Milvus migrans</i> )	Unknown	05.10.03	KFBG
Brown Hawk Owl ( <i>Ninox scutulata</i> )	Ho Man Tin	15.10.03	KFBG
Oriental Scops Owl ( <i>Otus sunia</i> )	Kwun Tong	21.10.03	KFBG
Common Buzzard ( <i>Buteo buteo</i> )	Kowloon Tong	06.11.03	Mai Po
<b>NON RAPTORS</b>			
Koel ( <i>Eudynamis scolopacea</i> )	Kam Tin	01.09.03	Kam Tin
Yellow Bittern <i>Ixobrychus sinensis</i> )	Sham Shui Po	17.10.03	Mai Po
Schrencks Bittern ( <i>Ixobrychus eurhythmus</i> )	Kwun Tong	18.10.03	Mai Po
Chestnut Bittern ( <i>Ixobrychus cinnamomeus</i> )	Wan Chai	22.10.03	Mai Po
White Breasted Waterhen ( <i>Amourornis phoenicurus</i> )	North Point	30.09.03	Lam Tsuen
White Breasted Waterhen ( <i>Amourornis phoenicurus</i> )	Morrison Hill	22.10.03	Lam Tsuen

Chinese Pond Heron ( <i>Ardeola baccus</i> )	Central	27.10.03	Lam Tsuen
Water Cock ( <i>Gallinula cinerea</i> )	Cotton Tree Drive	06.11.03	Mai Po
Common Teal ( <i>Anas crecca</i> )	Lok Ma Chau	19.11.03	Mai Po
Band Bellied Crane ( <i>Porzana paykulli</i> )	Mongkok	19.11.03	Mai Po
Moorhen ( <i>Gallinula chloropus</i> )	Peak	21.11.03	Kam Tin
Woodcock ( <i>Scolopax rusticola</i> )	Tsim Sha Tsui	22.11.03	KFBG
<b>MAMMALS</b>			
Greater Short Nosed Fruit Bat ( <i>Cynopterus sphinx</i> )	Tai Po	11.11.03	Tai Po



## BOOK REVIEW

### List of Chinese Insects, Vol. II.

by Hua, Li-zhong , 612 pages, hardcover.  
Guangzhou: Zhongshan (Sun Yatsen)  
University Press, 2002

Volume two of the ambitious one-man catalogue "List of Chinese Insects" is dedicated to Judson Linsley Gressitt (1914–1982) in commemoration of the 20<sup>th</sup> anniversary of his sudden death. This volume covers Coleoptera, Strepsiptera, Megaloptera, Neuroptera, Raphidioidea, Mecoptera and Trichoptera.

As I know from my own experience, cataloguing the insect fauna of China is not a simple task, especially if there is just a single author trying to compile about 70,000 species, described before 1990.

Evidently, Hua received some assistance from a number of specialists world-wide, as we can see from the comprehensive "acknowledgements" section. Consequently, some of the families treated in this volume have received professional attention, others not.

Staphylinids, for instance, have been compiled more or less correctly, although there are numerous typos and some double entries (e.g. *Stenus similioides* Puthz). Unfortunately, the water beetle list leaves much to be desired. Besides numerous typographical errors, resulting in badly mutilated taxa and author names, there are some rather curious lapses: *Haliphus bachmanni* Vidal Sarmiento & Crosso, 1969 from the Argentinian province of Formosa is the first species in the list of Chinese Halipidae. *Agabus ussuriensis* Nilsson, 1997 (erroneously cited as "Nilsson, 1996") should not be included as it was described definitely after 1990. *Ilybius rufus* Zeng, 1989 is not available according to the International Code of Zoological Nomenclature. The replacement name *Nipponhydrus guizhouensis* Hua, 2002 nom.n., was introduced for another unavailable name, *Nipponhydrus bimaculatus* Zeng, 1989. *Metagyrinus sinensis* is listed for a second time, under the invalid combination "*Paragyrinus sinensis*". The lucanid genus *Cladophyllus* is listed under the family Dryopidae. All species of Ptilodactylidae are placed under "Helodidae" (= incorrect name for Scirtidae). Luckily, the incomplete and sometimes erroneous compilation of the various water beetle families is not really a tragedy because they are thoroughly covered by three volumes of the "Water Beetles of China" (Jäch & Li 1992 – 2003) and by the first three volumes of the "World Catalogue of Insects" (Hansen & Nielsen 1998 – 2001). Some of the terrestrial families (e.g. Carabidae) have recently been compiled thoroughly in the "Catalogue of Palearctic Coleoptera, Volume 1" (Löbl & Smtana 2003).

As for the remaining families, Hua's catalogue will at least offer some interesting information for the beginner, who should, however, treat the the book with the necessary caution.

**M.A. Jäch**

Hansen, M. & Nielsen, E.S. (eds) (1998-2001). *World Catalogue of Insects*, Volumes I-III. Apollo Books, Stenstrup.

Jach, M.A. & Ji, L. (eds.) (1992-2003). *Water Beetles of China*, Volumes I-III. Zoologisch-Botanische Gesellschaft, Vienna.

Löbl, I. & Smetana, A. (eds.) (2003). *Catalogue of Palearctic Coleoptera* 1. Apollo Books, Stenstrup.

## “In the News”

by Jacqueline Weir, Jasmine Ng and Sukh Mantel

China and International News can be accessed on the web version of *Porcupine!*

Greenpeace has objected to plans for processing contaminated soil from the Disneyland project at the Tsing Yi incinerator. The soil contains dioxins and may pose a health and environmental risk. (SCMP, 30.7.03)

Dolphin watching trips in Sha Chau and Lung Kwu Tan Marine Parks have been breaking regulations and causing disturbance to groups of dolphin. Numbers of tour operators have increased, with the number of boats present peaking during the SARS outbreak. (SCMP, 3.8.03)

A Chinese white dolphin was being held at Ocean Park after it was stranded on a beach in Yan Chau Tong Marine Park, Sai Kung. This was the first time one of the animals had been found stranded live in Hong Kong. The animal had skin infections and possibly also a lung problem. (SCMP, 10.8.03)

Poultry traders have rejected all options proposed by the bird flu task force ‘Team Clean’ to prevent avian flu, and called for a top-level committee to be set up to work out details, before any action is taken. (SCMP, 17.8.03)

Although claimed to meet the Environmental Protection Department’s discharge quality standards, untreated sewage resulting from a pipe blockage, and a missing end cover, was found pumping directly into the Victoria Harbour. (SCMP, 8.9.03)

Friends of the Earth sought recycling of mooncake tins, of which 3 million are dumped in landfills each year, and packaging, which could reach 21 items of paper and plastic per tin. (SCMP, 9.9.03)

Researchers from the University of Hong Kong gave fresh evidence linking the SARS coronavirus to civets and racoon dogs from Guangdong’s wet markets, but stopped short of calling for a ban on wild animal trading, as the findings did not confirm that the virus found in civets directly caused the SARS outbreak. A top mainland health official speaking after the opening of the 54<sup>th</sup> session of the World Health Organisation’s regional committee for the Western Pacific said that it was too early to say whether eating civets should be banned. (SCMP, 9.9.03)

The Food and Environmental Hygiene Department was considering banning the use of natural seawater by live-fish wholesale markets and restaurants. Artificial seawater should be used instead to minimize the risk of cholera outbreak in the region. A new licensing system would also be in effect for all

fish wholesalers, whether or not they are selling live or chilled fish. (SCMP, 19.9.03)

The Hong Kong Zoological and Botanical Garden is planning to include new species, for example sea otter, Romer’s tree frog, Hong Kong newt, etc., and other endangered species for display and educational purposes. (Oriental Daily, 19.9.03)

Eggs of *Aedes albopictus*, the dengue-spreading mosquito, topped a breeding detection rate of 7.7 percent, exceeding the WHO standard of 5 percent and putting Hong Kong at “high-risk” for dengue fever transmission. (SCMP, 20.9.03)

An ageing female Chinese White Dolphin was found dead off Tsuen Wan coastal area. This 20-year-old dolphin was valuable for full-skeleton preservation and research purposes. (Oriental Daily, 20.9.03)

Hot summer and flooding in Shanghai lakes were believed to be responsible for smaller but more expensive Chinese mitten crabs out in the market last autumn. (SCMP, 22.9.03)

Exotic seafood and snakes, in addition to hi-tech equipment, are the hottest items to be smuggled to the mainland via Hong Kong’s open-waters. Hong Kong police and customs are co-operating in sharing of intelligence and deployment of officers to curb the trade. (SCMP, 26.9.03)

The demand for live seafood in Hong Kong and southern China, worth hundreds of millions of dollars each year, is leading to the decimation of coral reefs in Southeast Asia. Fish are stunned using sodium cyanide, a practice that although illegal in Philippines is hard to police. Approximately 20,000 tonnes of live reef fish caught in Southeast Asia are eaten each year in Hong Kong, and for each fish that is caught using cyanide approximately 1 m<sup>2</sup> of reef is destroyed, according to International Marinelif Alliance in Manila. (SCMP, 26.9.03)



Fig. 1. Large humphead wrasse are often caught with cyanide. This one was on sale in Shenzhen. (Photo: Liu Min)

Green Power urged the regulation of hidden ingredients in pesticide sprays and mosquito repellents from the government. Ten of the unlisted volatile organic compounds found in these household pesticides are the subject of concern by the USEPA and two of the ten, toluene and methylene chloride, are suspected to be potentially carcinogenic in

animals and cause undesirable effects in human pregnancy. **(SCMP, 02.10.03)**

Despite preservation concerns, wild water buffalo in Lantau Island resulted in complaints from villagers for creating nuisance and might be destroyed if no permanent home for them can be found **(SCMP, 13.10.03)**

A wild boar was seen fleeing in Tai Po, dodging into the Tolo Harbour and swimming for 400 m. It was finally captured by the AFCD after getting trapped by a sidewalk fence. **(Ming Pao, 13.10.03)**

Hoi Ha Wan beach in Sai Kung Country Park is to be cordoned off from speedboats that have been disturbing the marine park, allegedly destroying coral and putting swimmers at risk. Tai Po District Council and AFCD pledged that a barrier of buoys would be erected. The beach attracts up to 3,000 visitors per day at weekends. **(SCMP, 13.10.03)**

Professor Brian Morton called for protection of the marine environment in Hong Kong to be increased. Reclamation, development and pollution as well as exploitation of marine life have had devastating effects since he arrived in Hong Kong in the early 1970s. Despite the establishment of marine parks and a marine reserve, only 24.8 hectares of Hong Kong's sea area are protected compared with 40,000 hectares of its land area. **(SCMP, 13.10.03)**

Two tonnes of ivory worth \$2.7 million was seized from a container from Tanzania, Africa, on its arrival in Hong Kong. This is largest seizure ever in Hong Kong. The ivory was supposedly intended for the mainland, which has the highest worldwide demand for ivory. **(SCMP, 15.10.03)**

Increased dolphin-watching was blamed for the high number of dead dolphins recorded (14; double that of 2002) off Sha Chau and Lung Kwu Chau. Samuel Hung emphasized that such a number might also be related to ageing, pollution, by-catch and reclamation, etc. **(Apple Daily, 18.10.03)**

Since 1996, the Artificial Reef (AR) project by Agriculture Fisheries and Conservation Department (AFCD) recorded an increase in fish diversity from 40 species to 220 species to date. In October 2003 the Department finished the second phase of the AR project. **(Apple Daily, 26.10.03)**

A spokesman for the World Wide Fund for Nature Hong Kong declared that the \$61 million Hong Kong's first and only marine life centre at Hoi Ha Wan would open in mid 2004 even if no more funding could be raised. In this "phased" opening the basic facilities would be opened first; other features, including the aquarium and a touch pool, would be built at a later stage. **(SCMP, 27.10.03)**

China's first spaceman was greeted by smog and pollution readings exceeding 100, the threshold at which people with breathing difficulties are advised to not go outside. The Hong Kong Observatory said that the smog was one of the worst in the past few years. **(SCMP, 3.11.03)**

A 1.2 m long crocodile was found sunbathing in the brackish swamp of Nam Sang Wai, Yuen Long. AFCD experts tried netting and caging to capture the crocodile but to no avail. **(Apple Daily, 4.11.03)**

A proposed free-trade zone east of the Lok Ma Chau checkpoint was contaminated with thousands of tonnes of toxic soil containing organic compounds and heavy metals. Green groups expected that hundreds of millions of dollars would be needed to remove such toxic soil. **(SCMP, 6.11.03)**

Jade perch, which is believed to be cheap to raise, tastes good and is said to be beneficial to the heart, will be available in local markets. This introduced species from Australia is popular with local fish farmers, and hopefully would help revive the local market. **(SCMP, 10.11.03)**

Environmentalists feared that the Hong Kong-Shenzhen free-trade zone would hinder the development of a "new wetland habitat suitable for wildlife" in the abandoned river channel. **(SCMP, 13.11.03)**

A two-year-old Indian muntjac was "scared to death" when captured by AFCD officers in Sai Kung Highway. **(Apple Daily, 15.11.03)**

Two thousand chickens carrying the H5 bird-flu virus were returned to the mainland, according to the Food and Environmental Hygiene Department. During the past two years, 10,000 infected chickens have gone through the same routine. **(SCMP, 15.11.03)**

Two short-clawed otters in Ocean Park serve as new attraction boosting the educational atmosphere in the Park. **(Apple Daily, 27.12.03)**

Ocean Park's Dolphin Encounter attraction has raised concerns by conservationists about safety, animal stress, possible disease transmission and the mercenary use of marine mammals. Animal protectionists, however, thought that this activity raised public awareness towards the threats to this animal. **(SCMP, 2.1.04)**

262 black-faced spoonbills were recorded in Mai Po by the World Wide Fund for Nature Hong Kong, which was the highest since 1992. **(Oriental Daily, 3.1.04)**

The secretary for the environment, transport and works Dr. Sarah Liao Sau-tung has vowed to seek prosecution of those responsible for devastating a section of the Tung Chung river on Lantau island. Removal of 400 tonnes of boulders and pebbles from the site was ordered illegally by the Tung Chung Rural Committee, supposedly for flood protection, and a village contractor was hired for the work. A meeting is being held between the government and green groups to discuss its restoration. Dr. Bosco Chan Pui-lok, river ecology expert of Kadoorie Farm and Botanic Garden asked why ecology academics were not invited to the meeting. **(SCMP, 11.12.03, 15.12.03, 5.01.04, 13.01.04)**

## WILD CORNER

Any sightings of civets, mongooses, ferret badgers, leopard cats, barking deer, pangolins and porcupines – live or dead – should be reported. Rare birds, reptiles, amphibians and fishes, or unusual behaviour by common species, are also of interest, as are rare or interesting invertebrates and plants. If you think it is interesting, our readers probably will! Please give dates, times and localities as accurately as possible

### MAMMALS

Kwok Hon Kai saw two **Javan Mongooses** (*Herpestes javanicus*) that had swum to an 'isolated island' in fishponds at Shan Pui on 3 June 2003.

Five **Javan Mongooses** (*Herpestes javanicus*) were seen by John and Jemi Holmes, playing on a concrete path between the AFCD warden and the tower hide in the Mai Po Nature Reserve on September 6 2003.

On 5 October 2003 at 6 am Dylan Thomas noticed a **Mongoose** (*Herpestes* sp.) cross the road and go into a building site in Braemar Hill, North Point.

John and Jemi Holmes took photos of a single **Mongoose** (*Herpestes* sp.) in Fung Lok Wai, Yueng Long on the afternoon of 2 November 2003.

On 22 September 2003 at 10 pm, Valery Garrett saw a **Porcupine** (*Hystrix brachyura*) on Mount Kellet Road near Matilda Hospital, walking with spines erect.

Martin Cadman and Dave Shepard saw a **Porcupine** (*Hystrix brachyura*) on the footpath between Lion Rock and Beacon Hill at around midnight on 21 October 2003.

While walking in Repulse Bay Gap on January 9 2004, Laura Wong and friends found freshly blood-stained **Porcupine** (*Hystrix brachyura*) spines, some attached to skin and muscle, spread over a distance of more than 200 m. The animal itself was not found.



At 5.25 pm on 26 December 2003, Tom Glenwright, Koji Hoshi, Yoshimi Hoshi and Yasuko Hoshi saw two adult **Porcupines** (*Hystrix brachyura*) and one small juvenile at the car park on the Pat Sin Leng Nature Trail near Ha Tsat Muk Kui.

A **Common Otter** (*Lutra lutra chinensis*) was sighted by Simon Dover on 14 October 2003 at 1.30 pm, crossing a village road at Tung Tze, Plover Cove. It was sighted at a distance of about 40-50 m and seemed to be a juvenile.

A **Chinese Leopard Cat** (*Felis bengalensis*) was seen on a road near Wah Shan Tsuen, Sheung Shui by John and Jemi Holmes on 24 October 2003, at 1.43 am.

Dylan Thomas found a dead **Masked Palm Civet** (*Paguma larvata*) in the open lawn area of Mt Austin Park on 25 November 2003. It was a young male, approximately 1 metre long.

On Sunday 14 December 2003 at about 5.30 pm John Allcock saw two **Barking Deer** (*Muntiacus* sp.) on the trail alongside Shek Pik Reservoir. He heard 2 other animals running into the woods further along the trail, probably also barking deer.

Ashley Whitfield found a dead **Ferret Badger** (*Melogale moschata*) on 1 January 2004. It was on the plateau between Ngong Ping and Pyramid hill in Ma On Shan Country Park.

Eric Chan saw a **Porcupine** (*Hystrix brachyura*) in Shing Mun Country Park (near the tourist centre) at around 6.30 pm on 7 January 2004.

### BIRDS

Kwok Hon Kai reported seeing the following birds:

A pair of **Mountain Bulbuls** (*Hypsipetes mccllellandii*) in Tai Po Kau in July 2003.

A flock of **Grey-checked Fulvetts** (*Alcippe morrisonia*) in Tai Po Kau on 20 September (20 birds) and 27 September 2003 (5 birds).



A **Chinese Pond Heron** (*Ardeola bacchus*) which caught and ate an **Indigo Dropwing** (*Trithemis festiva*) in a stream near the Yuen Yuen Temple on 19 November 2003.

Two **Lesser Shortwings** (*Brachypteryx leucophrys*) in Tai Po Kau on 29 November 2003.

A dead **Lanceolated Warbler** (*Locustella lanceolata*) on the way to Mai Po (near Tam Kon Chau) on 19 November 2003.



Captain Wong, Alan Leung and Mathew Sin watched two **White-bellied Sea Eagles** (*Haliaeetus leucogaster*) mating at Sham Chung at about midday on 29 October. It lasted for about 10 seconds. Aggressive calls and wing beating were noted during the mating.

### FISH

On 26 July 2003, David Poon spotted a large number of the **Sea Urchin** *Salmacis sphaeroides* being beached upshore during low tide at Ting Kok. They were found by Jacqui Weir, Billy Hau and Aidia Chan in the same place the next day but were dead and being consumed by scavengers.

In summer 2003, Andy Cornish and Karen Qiu saw a **Filefish** (*Aluterus scriptus* Osbeck, 1765) at the marina in Clear Water Bay. It was about 15 cm long. The fish is locally rare (Sadovy and Cornish, 2000), but another individual was encountered in an intertidal area within Cape d'Aguilar Marine Reserve by Avis Ngan and Jasmine Ng.



Kwok Hon Kai and Captain Wong saw two male **Gobies** (*Stiphodon* sp.) at a lowland stream in Starling Inlet on 19 November 2003. This genus has not previously been recorded in the New Territories.

### AMPHIBIANS/REPTILES

Robert Davison saw a young **King Cobra** (*Ophiophagus hannah*) at 4 pm on August 23, on a Water Services Department access road in Shatin. It was about 45 cm long.

Dylan Thomas found a dead **Coral Snake** (*Calliophis maccllellandi*) at Mt Austin on the Peak on the morning of 15 October 2003. It was just under 50 cm long. He also found a **Rufous Burrowing Snake** (*Achalinus rufescens*) at the end of October; it was about 15-20 cm long.



A **Python** (*Python molurus bivittatus*) was photographed in Sai Kung on 18 October 2003, regurgitating its prey. Photos were sent by Gary Ades. See *Porcupine!* website.



### INSECTS

Laura Newman, plus Martin, aged 6 and Nicholas, aged 3, of Discovery Bay, raised an **Oleander Hawk Moth** (*Daphnis nerii*) caterpillar in early November. It became a moth around 10 cm in diameter. It may be the first record of the Oleander Hawk Moth from Lantau Island.



## Recent Publications

### Books, monographs etc.

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Cai, L.Z., Ma, L., Gao, Y., Lin, J.D., Lin, P., & Zheng, T.L. (2003). Temporal variations in *Apeudes mortoni* (Crustacea: Tanaidacea) densities on an intertidal mudflat at Futian, Deep Bay, China. *PMEC*: 401-407.

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