



Porcupine!

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

Sharks Fins; Tipping Points?

Every now and again, Society shifts a little in its worldview; an idea or attitude, once considered outrageous, unreasonable, or laughable becomes credible, even fashionable. Such a change can happen quite suddenly, maybe following a particular event, or because of a special set of converging circumstances. When the change is abrupt, it is sometimes referred to as a 'tipping point', an expansion on its original reference to a specific social phenomenon, coined by Morton Grodzins in the 1960s. This concept was picked up more recently by Malcolm Gladwell in his bestselling book 'The Tipping Point'. I recommend this book to anyone interested in the transformation of ideas into action.

I would like to suggest that Hong Kong's attitude towards the use of shark fins has reached one 'tipping point', and explore reasons why this might have happened, as well as identify what remains to be tipped. The manifestation of a shift in attitude was an agreement by the University of Hong Kong's Safety, Health and Environment Committee that there are good environmental reasons for strongly discouraging the sale of shark's fin dishes in any form at HKU, and to ban it from official functions (<http://www.hku.hk/publications/> - Bulletin Volume 7 November 2005). Universities are, by nature, conservative and I applaud HKU for its unequivocal stance on this issue, as well as for setting a clear example to local Society. This decision, small as it may seem, reflects considerable changes in Hong Kong since campaigns began several years ago to raise awareness about the issues surrounding shark fin fisheries. Given that Hong Kong is the major global importer of shark fins, and given the cultural significance of shark fin dishes to many people within China, including of course in Hong Kong, what does the university's decision tell us about changing attitudes?



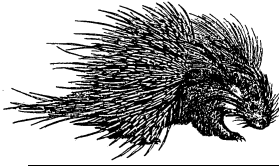
My personal opinion is that several factors converged to 'tip' HKU into action, and that several more tipping points are needed before Society can balance natural resource limits (i.e. sharks), on the one hand, and consumer demand that exceeds these limits, on the other. What converged were years of persistent and consistent lobbying by a small number of conservation groups and individuals, reliable and readily available biological, fishery and trade information, and the Disney debate. The highly public discussion regarding the serving of shark fin dishes in the new Hong Kong Disneyland, an organization that claims to be environmentally friendly, attracted public attention to Disney's inability to find sustainable sources of shark. Importantly, the debate revealed clearly to many in Hong Kong the realities of shark capture, from live finning, to unsustainable fishing practices and threatened species.

The next step, that of achieving sustainable shark capture practices, should, on the face of it, find broad support. What we know is that most sharks cannot withstand high levels of fishing pressure, that demand for shark fins is higher than their supply, that shark products are economically important for many businesses, and that shark fins have high cultural significance in the region. In the interests of all of these stakeholders, albeit for different reasons, it is important that sharks are exploited sustainably well into the future. The next 'tipping point', therefore, will come when we have found a way to capitalize on these self-interests to limit trade and consumption to levels consistent with natural limits.

There are few options for shark utilisation and management. Given how difficult it is to manage shark fisheries based on quotas (the example of the whale shark, *Rhincodon typus*, in Taiwan on p. 4 is typical), threatened shark species need complete protection until management mechanisms are effectively in place. Other steps involve controlling catches of non-threatened species to within sustainable levels, and a commitment from businesses and consumers to support such practices. One thing is certain; unless something else 'tips', there will soon be no more shark fins, for anyone.

Yvonne Sadovy

Porcupine!



NUMBER 33
November 2005

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

INSIDE THIS ISSUE:

Sharks Fins; Tipping Points?	1
Editorial	2
DEB news	2
Vertebrates	3
SWIMS tidings...	10
Miscellany	11
Book Reviews	20
Wild Corner	22
Recent publications	24

Editorial

Ecologists have been slow to get involved in the H5N1 bird flu issue, despite rising public concern, preferring to leave the talking to virologists and public health experts. However, many of the currently unanswered questions are ecological, so we have a lot to contribute, and the virus has the potential for both direct and indirect conservation impacts, so we cannot just ignore it.

An ecologist reading the recent bird flu literature cannot help being struck by the ecological naivety that most articles display. This is often our own fault. The migratory “flyways”, for example, have been great publicity for nature reserves, but, in Asia at least, are a crude simplification based largely on the movements of a few species of waterbirds. This did not matter much until virologists started to use flyway maps to prove (or disprove) the role of migratory birds in spreading bird flu. If we admitted our ignorance, perhaps someone would fund the studies that we need to fill in the gaps in our current knowledge? The truth is that, for the great majority of migratory species that visit Hong Kong, we know when they arrive and when they leave, but not where they come from or go to. The recapture rate of number-ringed birds is far too low for this to be an efficient way of learning about migration routes. Colour flagging has a much higher success rate and has revolutionized the study of wader movements. Could it be applied more widely? Satellite transmitters have so far only been used on the endangered Black-faced Spoonbill in Hong Kong, with stunning success, and should be tried on other large migrants, such as the Grey Heron and Great Cormorant (both of which are susceptible to H5N1).

On the conservation side, thousands of wild waterbirds have already died from H5N1 at various sites in East Asia, so an

out-break in a rare species that is concentrated at a few sites – the black-faced spoonbill is an obvious example – is a realistic possibility. Equally, if not more, threatening is an overreaction by panicked officials, as shown by Vietnam’s reported attempts to eliminate all birds, wild and domestic, from urban areas.

A role for migratory waterbirds in spreading the H5N1 virus is likely but currently unproven. An alternative possibility is that the outbreaks in these birds are a result of transmission from poultry or resident wild birds after arrival. Indeed, the whole focus on waterbirds as the natural reservoir for this virus may prove a red herring. However, there is no doubt that migratory waterbird populations are a reservoir for a huge variety of flu viruses, as are the populations of the many migrant species that are not associated with water. Studies of their movements could thus contribute to both Science and public health

RTC

News from DEB

The big news is, of course, not from DEB but from Government. It has just been announced that the Country Parks and Marine Conservation Divisions of the Agriculture Fisheries and Conservation Department are to be merged with the Environmental Protection Department. The remains of AFCD will be reorganised into a new Department of Agriculture and Environmental Hygiene. The plan has yet to be put before LegCo but it is intended that this will happen before the end of 2005. The reorganization puts the arms of government responsible for environmental protection and nature conservation under one roof and, on the face of it, seems a rational move. I certainly hope that it proves to be a successful one. The merger would also result in the formation of two new divisions within EPD: the Country and Marine Parks Division, and the Ecology and Biodiversity Division. Now, where have I heard that name before?

On a different note, I’d like to draw attention – somewhat belatedly - to the formation of a new student society at the University of Hong Kong: the Environmental Life Science Society. The ELSS was formed late last year, and is now about to celebrate its first anniversary. The members – and especially the Executive Committee – are an active and dedicated bunch who are keen to spread the word about the need for awareness and conservation of nature in Hong Kong. You can find out more about them at <http://web.hku.hk/%7Eelsshku/> or via the link on <http://www.hku.hk/ecology/>. The ELSS homepage also provides access to their newsletter *Succession*, which describes recent activities and events.

Before signing off, I should report that my term as Head of DEB comes to an end on December 31. So, this is a good time for me to thank everyone who has supported the department during the last few years, and most especially those who have contributed articles and other efforts to making *Porcupine!* the success it is.

David Dudgeon

VERTEBRATES

Another alien has landed: the discovery of a wild population of water dragon, *Physignathus cocincinus*, in Hong Kong.

by Allen To

An apparently wild population of the water dragon, *Physignathus cocincinus*, has been discovered along a stream on Tsing Yi Island, New Territories, which runs adjacent to two housing estates. The stream has two sections, the lower section is about 30 m long with large boulders and has a wetted width of about 1 m, covered with riparian shrubs. The upper section is about 50 m long and is more densely vegetated than the first section. There are some agricultural activities along the upper section.

I am living in the housing estate next to said stream. Since water dragons were discovered there in October 2004, I have visited the stream on a bi-weekly basis. So far, at least eight individual water dragons have been recorded. Three are more than 60 cm long from head to tail; two are about 45 cm long and the last three, juveniles, are about 30 cm long (Fig. 1). The three largest water dragons are likely to be males because of the large size, triangular head and extended mid-sagittal crest (Fig. 2). The other two medium-sized individuals are possibly females (Fig. 3). The water dragons were less active in December 2004 and were not sighted again until April 2005. Hikers using the nearby hiking trail reported sightings of these 'large lizards' a few years ago. The water dragons appear to have colonized the whole of the lower section of the stream and along to the middle part of the upper section. They were observed utilizing boulders as basking spots, and the stream and tall trees as resting sites (or maybe as a sentry box for defending territories).

The water dragon, is semi-aquatic and is distributed in China, Thailand and Vietnam (Lau, 1995; Zhao & Adler, 1993). There is no known previous record of this lizard in the wild in Hong Kong (Bogadek & Lau, 1997; Karsen *et al.*, 1998). However, it is commonly available in local reptile pet shops for sale (Lau *et al.*, 1997). Thus, it is very likely that these water dragons were released by people who used to keep them at home as pets. If this population in Tsing Yi is breeding successfully and expanding, it becomes an additional naturalized exotic species in Hong Kong. However, it does not appear on the IUCN Global Invasive Species Database and is therefore not considered invasive anywhere in the world. [1]



Fig. 1. The smallest juvenile (~ 30 cm long) (Photo: Allen To).



Fig.2. An adult male (> 60 cm from head to tail) resting on a branch (Photo: Allen To).

Bibliography

[1] <http://www.issg.org/database/welcome/>

Bogadek, A. & Lau, M.W.N. (1997). A revised checklist of Hong Kong amphibians and reptiles. *Memoirs of the Hong Kong Natural History Society* 21: 173–188.

Karsen, S.J., Lau, M.W.N. & Bogadek, A. (1998). *Hong Kong Amphibians and Reptiles*. The Provisional Urban Council, Hong Kong SAR. 186pp.

Lau, M.W.N., Ades, G., Goodyer, N. & Zou, F.S. (1997). Wildlife Trade in Southern China including Hong Kong and Macau. In: *Conserving China's Biodiversity* (John MacKinnon, WANG Sung eds.), China Environmental Science Press, Beijing: 141-159.

Lau M. (1995). 專題報告: 中國南部野生動物貿易調查報告 Available from <<http://www.wfwchina.org/csis/shwdyx/technical%20report/10.htm>> [Accessed 4 July 2005].

Zhao, E.M. & Adler, K. (1993). *Herpetology of China*. Society for the Study of Amphibians and Reptiles in cooperation with Chinese Society for the Study of Amphibians and Reptiles. Oxford, Ohio, USA. 522pp.



Fig. 3. Medium sized female (~ 45 cm long) (Photo: Allen To).

Enormous fishing pressure on the whale sharks *Rhincodon typus* in Taiwan and southern China waters

by Kenny Leung

On November 15, 2002, the whale shark *Rhincodon typus* was placed on Appendix II of CITES (Convention on International Trade in Endangered Species), a United Nations Treaty Organization which requires the member nations of CITES to monitor international trade in whale shark products and to ensure that international trade does not threaten survival of the species [1]. In many countries such as Australia, India, the Maldives, the Philippines, South Africa and United States, whale sharks are protected, and all trade in whale shark products (fins, flesh and skin) is prohibited [1].

Unfortunately, the flesh of *R. typus* is considered a delicacy by many people in China, Taiwan, Singapore, Korea and Japan, leading to overexploitation in SE Asia. The whale shark is also known as the 'tofu' shark in Taiwan (or the white meat whale in Hong Kong), because of its soft white flesh, and it is now the most expensive of the shark meats available on the market. A set of four dried fins runs US \$400-500 in Taiwanese markets while the resale value of frozen whale shark flesh for export to Asian markets has reached over US \$1/kg [2]. It is therefore not surprising that significant fisheries for whale sharks have been developed in Taiwan and southern China.



Fig. 1. A young male whale shark *Rhincodon typus*.

In early July 2005, I attended a training workshop on modern fisheries, aquaculture and seafood processing in Taiwan which was organised by the Joint Committee of Hong Kong Fisher's Association and the Agriculture, Fisheries and Conservation Department of Hong Kong SAR. During the workshop, we visited several major fishing ports in Taiwan and, sadly, encountered two young males of *R. typus* (3-4 m in length) (Figs. 1 & 2). Lengths of newborn whale sharks range from 0.55 to 0.65 m while the adult can reach as long as 18 m [1]. Through interviews with fishermen, it was estimated that each shark was worth over HK\$ 150,000 (or US \$19,230).



Fig. 2. Young male whale shark (Photo: Kenny Leung).

As a member of CITES, the Taiwanese Government has made some efforts to control the fishing pressure on the whale shark. Recently, they have implemented legislation to restrict the allowable number of *R. typus* being caught each year (Fig. 3) Taiwan's year 94 = 2005]. The restricted quota is 65 whale sharks per year. If the quota is reached within a year (e.g. 1 Jan-31 Dec 2005), a complete prohibition of fishing *R. typus* will be applied and enforced in the remaining period of that year. To achieve such a goal, all fishermen must report their catch of whale sharks within 2 days after arrival at the fishing port and must bring the whole fish to land. The fishermen are also required to report to the Government if they have caught the basking shark *Cetorhinus maximus*, megamouth shark

Megachasma pelagios and great white shark *Carcharodon carcharias*. When the quota of *R. typus* reaches 50, all fishermen should check with the fisheries communication centre to confirm whether there is still quota available before catching more whale shark. Violating these rules will lead to prosecution; the maximum penalties include a maximum of 3 years in jail and a fine of up to NT \$150,000 (= HK \$34,567 or US \$4,455). Obviously, the fine is too small when compared with the market price of a whale shark. The two 'little' sharks I met in Taiwan already made up the quota to 52 in July this year and the market value of each of them is four times more than the maximum fine! As a matter of fact, no one can stop a Taiwanese fisherman from storing or selling sharks in other countries once the quota is filled.

Even worse, when I talked to some Hong Kong fishermen, they told me that there is a big business for catching whale sharks in the South China Sea; especially during late spring and early summer. As the sharks usually migrate along a similar route each year, experienced fishermen are able to locate them relatively easily. The whale sharks are often very friendly and many of them won't feel threatened when the fishing vessel approaches them. It was not unusual for a team of ten fishing vessels to catch more than ten whale sharks in a day during the peak season near Hoi Nan island. The fishermen all agree that they are easy to catch but very difficult to handle because of their enormous size. One of the fishermen said that he had recently caught one 6-7 m long whale shark and sold it for HK \$140,000. Such profit is equivalent to several months of hard work fishing finfish. Undoubtedly there is a huge temptation for fishermen to catch more and more whale sharks. Based on what I heard from the fishermen, there is virtually no monitoring of the number of *R. typus* being caught in China.

Most shark species breed very slowly; some take more than 20 years to reach sexual maturity, and then have only 2 pups every other year [1]. The current rate of removal of whale sharks is alarming. If such an over exploration trend carries on, *R. typus* soon will be listed as an endangered species.

What can we do to protect the vulnerable whale shark? First, we should not eat them. If everyone resists consuming them, there will be no demand for them. But it is extremely difficult to educate and change peoples' minds especially in SE Asia. Secondly, we can help fishermen to establish an eco-tourism business for watching whale sharks, or diving with them instead of killing them. Such eco-tourism has been proved to be sustainable and profitable in many places [1]. Something that you may not know, we can in fact also dive with whale sharks in waters nearby Hong Kong. Last Sunday, I watched a TV documentary made by TVB; it featured the underwater treasures in Hong Kong. In eastern waters, two professional divers found and filmed a young whale shark (5-6 m long) near a place called "Tai Ching Jum" and they certainly enjoyed swimming with this lovely creature. I would like to propose that SWIMS organize a trip for us to dive with our 'local' whale shark. Perhaps, we should also carry out some insightful scientific studies with a view to learning more about this magnificent fish.



Fig. 3. Information on protective legislation (Photo: Kenny Leung)

Bibliography

- [1] http://sharks.org/whalesharks_questions.htm
 [2] <http://www.caske2000.org/sharks/sharkwhale.htm>

First sighting of the pearl scale butterflyfish in eastern Hong Kong waters

by Liu Min and Valerie Ho

The pearl scale butterflyfish (*Chaetodon xanthurus*) has been recorded in the western Pacific, from Indonesia, Palau and the Philippines to the Ryukyu Islands (Map 1). Along coastal waters of China, the species has been noted in Hainan and Taiwan, and also in surrounding waters of Hong Kong, such as the Lema Islands. A pearl scale butterflyfish in eastern Hong Kong waters was first spotted at Bluff Island (Ung Kong Wan) on the 2 October 2005 during the Big Fish Count (see p.11), organized by the World Wide Fund for Nature Hong Kong; it was a single individual of 7 – 9 cm total length, swimming around stag-horn corals (*Acropora sp.*) at the depth of 4 m.



Map 1. Global distribution of the pearlscale butterflyfish (*Chaetodon xanthurus*).

The pearlscale butterflyfish can be readily distinguished from other members of the genus *Chaetodon* by the cross-hatched pattern on body sides due to black scale margins (Fig. 1). The recorded maximum size of the species is approximately 14 cm standard length. Juveniles are particularly restricted to live coral areas and remain close to shelter; adults can be found in outer reef slopes and drop-offs to a depth of 50 m (Allen *et al* 1998). Fish usually occur singly or in pairs and are active during daylight hours feeding on small benthic invertebrates and algae. Little is known about the biology of this species.

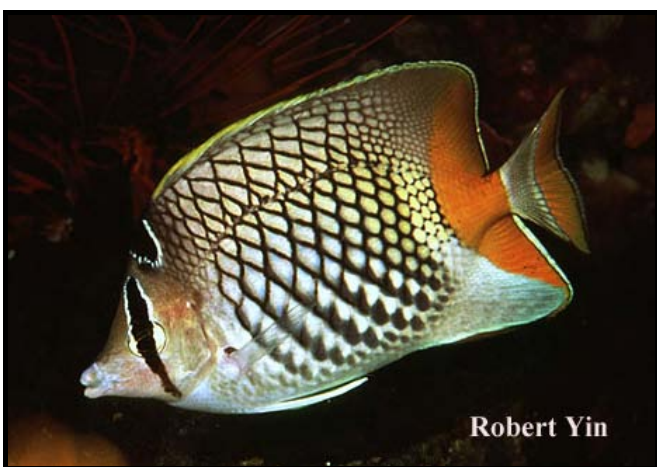


Fig. 1. The pearlscale butterflyfish (*Chaetodon xanthurus*) (Photo: Robert Yin).

There are another two species in the genus *Chaetodon* which share a similar appearance with the pearlscale butterflyfish;

the atoll butterflyfish (*C. mertensii*) (Fig. 2) from the Indo-west Pacific, and the Eritrean butterflyfish (*C. paucifasciatus*) (Fig. 3) from the Red Sea and neighbouring Gulf of Aden. However, neither has the strong crosshatched pattern seen in the pearlscale butterflyfish.



Fig. 2. The atoll butterflyfish (*Chaetodon mertensii*) (Photo: John E. Randall).

Temperature and salinity of nearshore waters of Hong Kong, especially in the east, are determined by three major water currents; the Kuroshio Current from the Pacific and the Taiwan Current from the East China Sea in the winter, and the Hainan Current from the South China Sea in the summer, which support subtropical and tropical marine fish species in the area. It is likely that these currents bring some unusual marine fish larvae or juveniles to settle in Hong Kong waters; however, it is not clear whether these species are able to maintain a population locally (Sadovy & Cornish 2000).



Fig. 3. The Eritrean butterflyfish (*Chaetodon paucifasciatus*) (Photo: John E. Randall).

Bibliography

Allen, G.R., Steene, R. & Allen, M. (1998). *A guide to angelfishes and butterflyfishes*. Odyssey Publishing/Tropical Reef Research.

Sadovy, Y. & Cornish, A.S. (2000). *Reef fishes of Hong Kong*. Hong Kong University Press, Hong Kong.

More information about the Big Fish Count and on butterflyfishes is available from <http://www.wwf.hk.org> and <http://www.fishbase.org>, respectively.

Some insights from Taiwanese fisheries

by Kenny Leung

I was very glad to attend a training workshop on “Modern Fisheries, Aquaculture and Seafood Processing” at National Taiwan Ocean University (NTOU) in Taiwan during early July 2005. It was co-organised by the Joint Committee of Hong Kong Fisher’s Association and the Agriculture, Fisheries and Conservation Department of Hong Kong SAR. During the workshop, we attended 3 days of intensive lectures at NTOU located in Keelung and then spent 3 days visiting different fisheries organisations and ports, aquaculture facilities as well as seafood processing plants in Taiwan. We travelled from the north to south of Taiwan, passing through Taipei, Suao, Hualian, Kaohsiung etc. Here, I would like to share some of my experiences and photos taken from this trip with readers of *Porcupine!*

In total, there are 300,000 fishermen in Taiwan and at least 1,000 vessels over 100 tonnes. According to the President of Overseas Fisheries Development Council of The Republic of China, Mr. Peter Ho, fisheries production contributed NT \$ 97 billion or 0.54% of GDP in Taiwan in 2003 (equivalent to 1.5 million metric tonnes). Obviously, the scale of Taiwanese fisheries is many times greater than that in Hong Kong. However, like Hong Kong and other parts of the world, Taiwan is also facing problems associated with a significant drop in available fisheries resources, especially in coastal and offshore areas. Many traditional coastal fishermen cannot make ends meet and some can no longer fish. To resolve these problems, since 1980s the Government and fisheries organisations have been making huge efforts to transform the entire fishery industry. The components of such transformations include the development of distant water fisheries, establishment of eco-tourism (e.g. dolphin and whale watch, diving), deployment of artificial reefs for both conservation and eco-tourism (i.e. diving business), enhancement of aquaculture yield and improvement of marketing seafood products as well as implementation of fishing moratorium incentive schemes (Fig. 1). Based on my observations, Taiwanese fishermen are very united and well organised, and many of them are well educated, i.e. university graduates. These transformations create many job opportunities and improve the living standards of people within the fishery community. But it is not clear whether the fisheries are improving.

Taiwan has been heavily subsidising the fishery industries. Due to the significant decline in coastal and offshore fisheries, the government has been promoting and helping the development of distant water fishing. So far, there are 30 advanced vessels in Taiwan (like the one shown in Fig. 2) which can be operated in deep-waters for catching high value



Fig 1. An official poster announcing the fishing moratorium incentive schemes. There are two schemes:

- (1) *Voluntary no-fishing – active coastal and offshore vessels must stop fishing and park at the port for at least 120 and 100 days, respectively. The period of ‘no fishing’ can be freely selected between 1 May and 31 October each year.*
- (2) *Official moratorium – all vessels must follow the suggested period given by the fisheries organisation and park their vessels at the port for at least 60 days.*

fish such as tunas. Each of these vessels costs three billion NT dollars (= HK \$0.7 billion); fishermen can’t afford this without the support from the government and private investors. In 2003, distant water fisheries contributed 58.5% of total fisheries production in Taiwan, whereas coastal fisheries only accounted for 4.2%. Nonetheless, I am concerned that many tunas, swordfish, sharks, tooth (or oily) fish, moonfish and sunfish have already been seriously over-exploited by such powerful fishing vessels. As I believe that pictures can speak better themselves, I have selected some photos (Fig. 3-11) to show some of these species (I must confess that I am not a good photographer). Although Taiwanese fishermen must follow the international quota system, the FAO Code of Conduct for Responsible Fishing [1] and international plans of action, the current trend of increasing effort in distant water fisheries will certainly do more harm to such fragile ocean ecosystems because many of these oceanic species grow slowly, reach sexual maturity at old age and have low reproduction rates. From discussions with fishermen and lecturers at NTOU and from the catch data, it is clear that even with increasing fishing effort, the yield of some key species such as blue-fin tuna *Thunnus thynnus*, and albacore tuna *T. alalunga* have declined

substantially and fishermen have switched to catch more bigeye tuna *T. obesus* and yellow-fin tuna *T. albacares* which will be eventually depleted as well. We do need to ask what is the sustainable harvest rate or yield in the ocean?



Fig. 2. Example of an advanced fishing vessel used for distant water fisheries with a 1.2 km long purse seine that can cover an area of 400 m². It is equipped with a helicopter that can facilitate searching for tuna, and with a deep freezer to preserve the tuna at < -60°C.

Different sizes of vessels will be awarded with different amounts of money from the Government to compensate their loss during the moratorium. For example, vessels of 60-70 tonnes will be paid NT \$30,000 for option (1) or NT \$ 133,000 per 60 days for option (2). The schemes are incentive-driven and very flexible when compared with the one in P.R. China.



Fig. 3. Price negotiation between fishermen and buyers on the blue-fin tunas *Thunnus thynnus*. This was an exciting event in the port with many people watching and engaging in the negotiation.



Fig. 4. Tens of yellow-fin tunas *Thunnus albacares* were displayed awaiting deals between the seller and buyer.



Fig. 5. Vessels using long-lines or long purse seines often catch many different fish species including sunfish, moonfish and many different shark species.

Let's talk about the bright side. I was delighted to see that some fisheries organisations have incorporated 'green education' in their eco-tours. During our visit, the word 'sustainability' has been mentioned many times by the presidents, directors, managers and fishermen in various fishery organisations, indicating that they do understand that marine resources are limited, and will be seriously depleted without proper management and enforcement. At least, it

sounds optimistic and environmentally friendly. I hope they will achieve 'sustainable fisheries' through practice.



Fig. 6. Toothfish (or oily fish), *Dissostichus* species are also common in the offshore and distant water catches of Taiwanese fishermen.



Fig. 7. Hundreds of various sizes of swordfish with their sword removed. Many of them were over two meters in length.



Fig. 8. Dorado fish, *Coryphaena hippurus*, are commonly caught by vessels using long-lines.



Fig. 10. Taiwanese fishermen argue that they never conduct 'finning practices' on sharks and that Taiwanese use every single part of the shark for consumption. They also believe that many shark stocks are still very healthy and that no quota should be implemented for sharks. But, as you can see this picture, just a tip of an iceberg, thousands of sharks are killed everyday.



Fig. 9. Many fishes, such as sharks and sunfish, are dissected onboard and their muscle and internal organs separately frozen. The same method can be used to process whale sharks to evade the quota monitoring system.



Fig. 11. Every single bit of the shark fin is removed and processed immediately after landing. There is a huge demand for shark fins regardless of the shark species, or their size, throughout SE Asia.

Bibliography

[1] <http://www.fao.org/fi/agreem/codecond/ficonde.asp>

[2] <http://www.afcd.gov.hk/fisheries/eng/capture.htm>

Epilogue: on the one hand, ecologists and conservationists would like to see reduction in fishing efforts, and stock recovery; on the other, governments have to consider the social side and living conditions of fishermen by allowing and facilitating them to fish more. It seems a true dilemma in fisheries management. As we all know, the fishery industry in Hong Kong is somewhat getting close to its 'sunset'. In 2004, there were only 9,500 fishermen (0.14% of 6.7 million of people) in Hong Kong [2]. In my opinion, our fishermen are less united and not as well-organised as Taiwanese fishermen; hence any transformation of the industry is rather difficult. Although our Government has been supporting and subsidising the fishermen for many years, our fishery development is still far behind counterparts like Taiwan. In Hong Kong, it is a bit late to develop distant water fisheries. So far, there is only one company directly engaged in distant water fishing. Building advanced vessels will require a large amount of money (@ billions \$) while the operators must be well-educated in both ocean science and engineering. Probably, it is not a viable option for the traditional fishermen in Hong Kong. What is the way forward for our fishermen? This is an important but a difficult question for the Government, fishermen, politicians and academics. The Taiwanese model may offer us some useful insights.



SWIMS tidings....

It has been a very busy time at SWIMS since the last *Porcupine!* hit the press. In March we had the pleasure of a visit by Sir John Swire. Sir John was the driving influence at the Swire Group behind the establishment of SWIMS and officiated at both the opening ceremonies of the Swire Marine Laboratory in 1990 and of the Swire Institute of Marine Science in 1994. It was therefore a great pleasure to show Sir John around the renovated facilities and to update him on SWIMS development and future directions. Sir John, and his brother Sir Adrian, always make the effort to visit SWIMS and chat with staff and students when they are in Hong Kong reaffirming their support and commitment to SWIMS.

SWIMS has been a pretty full house over the summer – with student Research Assistants helping projects at Hoi Ha Wan and on fish larval surveys, as well as the normal variety of student projects. We are extremely grateful to all the cheerful volunteers, too numerous to mention, who populated SWIMS in the summer. We also had our fair share of student visitors, including Tilly Thoreson and Tom Gallagher (Bangor University UK) who joined Olivia Stark (Oldendorf, Germany). Olivia has been working at SWIMS for the last year on the impacts of fishing on sea urchin populations. We also welcomed visiting scientists, including Dr Giacomo Santini (Firenze University Italy) who worked with Avis Ngan on limpet behavioural modeling and Ryan Hechinger (University of California Santa Barbara, USA) who investigated parasites in mud snails. Dr Santini gave a seminar at SWIMS, as did Prof Mike Kingsford (James Cook University, Australia).

The most recent SWIMS event was a special Symposium on the Physiology of Marine Organisms (SEMO) attended by over 60 delegates and held in September. The ecophysiology of marine organisms is a research area that which we are developing at SWIMS and this symposium attracted speakers from all major tertiary institutions in Hong Kong, as well as colleagues from the UK, Italy and Brunei. The talks were very well received and achieved their aim of stimulating collaboration and links among participants. Following the Symposium, Drs David Morritt (London University, UK) and Maui de Pirro (Firenze, Italy) stayed on to work on the impact of summer monsoons on intertidal organisms with staff at SWIMS.

Finally – congratulations to ex-SWIMS colleagues Dr Andy Cornish, who has recently become the Director of Conservation at World Wide Fund for Nature HK, and Dr Benny Chan recently appointed as an Assistant Professor at the Research Centre for Biodiversity, Academia Sinica, in Taiwan – we look forward to collaborating with both Andy and Benny in the future!

Gray A. Williams
Hon. Director SWIMS

MISCELLANY

Big Fish Count 2005

by Ng Wai Chuen and Priscilla Leung

The Big Fish Count 2005, organized by WWF Hong Kong, was held on a sunny, calm Sunday on 2 October. This was the second year of the annual fund-raising event which aims to arouse public awareness about marine life and conservation. The data collected could also contribute to database establishment and better understanding of local fish communities and associated environment. This year, the participating teams increased from 4 to 10 compared to last year. The SWIMS formed a six-diver-team which included Anna Situ, who previously participated in the Big Fish Count 2004, Valerie Ho, Wallace Choi, Liu Min, Priscilla Leung and Ng Wai Chuen; the team was also supported by Wai Tak Cheung, Jasmine Ng and Karen Lui. With the full support of Dr Gray Williams, the Director of the SWIMS, and organization by Dr Kenneth Leung, our team got everything set and ready to dive (Fig. 1).



Fig. 1. The SWIMS diving team for Big Fish Count 2005; from the left, Karen Lui, Ng Wai Chuen, Priscilla Leung, Anna Situ, Wallace Choi, Valerie Ho, Liu Min and Jasmine Ng (Photo: Wai Tak Cheung).

Within the 'game' period of 8 hours, each team could choose 3 sites for their fish counts, and each diving pair could do a 45-minute dive at each site to witness and record as many species as possible. We chose Ung Kong Wan at Bluff Island as our first survey site; the bay contains mainly sandy substrate with a band of rich coral at the north side and rocky reef at the northwest outcrop. In order to record a wider range of fish species, our three diving pairs decided to swim along separate routes to cover different habitats; coral, soft substratum and rocky reef. After jumping into the sea, we knew that it would be an enjoyable day, with nice visibility of

6 to 7 m, good water temperature and light penetration. We then went for our first reconnaissance and recorded 55 species within the 45 minute-dive. The site is occupied by locally common species, such as clown fish *Amphiprion clarkii* (Fig. 2), schools of Chinese demoiselle *Neopomacentrus bankieri*, bubblefin wrasse *Halichoeres nigrescens* and various cardinalfishes from the genus *Apogon*. We also encountered some rarer fishes like Raccoon butterflyfish *Chaetodon lunula*, Eclipse puffer *Takifugu ocellatus*: Min and Valerie's record of a Pearlscale butterflyfish, *Chaetodon xanthurus*, was the first record of this species within Hong Kong waters.



Fig. 2. The clown fish *Amphiprion clarkii* at Ung Kong Wan (Photo: Ng Wai Chuen).

Apart from the diverse fish fauna, the hard coral assemblage at Ung Kong Wan is one of the most diverse and abundant communities in the territory. However, it is also one of the most easily accessed sites for pleasure vessels from Sai Kung, and hence a hot spot for leisure diving and other water activities. Although a "no anchoring area" has been established to protect the hard coral (AFCD, 2005), its effectiveness is definitely not enough as colonies are suffering from breakage and unrooting (Fig. 3). The damage is probably caused by anchoring, poor diving practice and fishing activities. We believe Ung Kong Wan should receive greater protection to conserve the coral community and its associated flora and fauna.

The second station was set at Shelter Island, the site contains lower abundance of coral and larger areas of rocky and sandy substrata than Bluff Island. In this site, we encountered more sand-associated species including various gobies and lizardfishes, and shoaling species such as Yellowstripe scad *Selaroides leptolepis* and Barracuda *Sphyraena* sp. (Fig. 4). Some less common species like Threespot dascyllus *Dascyllus trimaculatus* and Honeycomb filefish *Cantherhines pardalis* were also observed. At the end of the dive, our team counted 64 species in this site.

After two dives, we took a quick rest to recover our cold, dry and tired bodies before the more intense third one. For the last site, we wanted to survey a deeper rock reef to get a better score on deeper water species, and so we decided to dive at Lak Lei Tsai. This is a site comprising three rock piles with a steep slope running down to 12 m. The rocky walls, colonies

of short-spine and long-spine sea urchins were seen everywhere. At the bottom there was a garden of sea anemones occupied by groups of clownfish. We recorded fewer coral-associated species, but more rocky reef species, like Spottedtail morwong *Cheilodactylus zonatus* and Largenose boxfish *Ostracion rhinorhynchos*. Finally, we finished this station with a record of 51 species.



Fig. 3. Unrooted coral colony (*Acropora* sp.) at Ung Kong Wan (Photo: Ng Wai Chuen).

Although exhausted, the whole game period was very enjoyable, and we were excited that we had seen so many species in one day. The final score of the SWIMS team was 92 non-overlapping species, are 2 species higher than our record last year. The luckier team was CUHK team who completed the game with 96 species, and they also recorded an Axilspot hogfish *Bodianus axillaris* which has not been reported in local waters before. Integrating the data from all teams, a total of 173 species were identified in the Big Fish Count. It is an impressive figure to remind us that our sea still supports diverse fish assemblages (Sadovy & Cornish 2000). On the other hand, we must be alarmed that most of the fishes that we saw were either juveniles, or small, non-commercial, species which are escapees from the over-crowded and too-small-mesh-sized fishing activities. We believe that these surviving fish communities cannot recover or sustain themselves without long-term, effective, measures that address unregulated fishing operations.

Finally, we hope this event will continue year by year to raise public awareness about marine conservation, to keep breaking species records, and to maintain its title as “Big Fish Count”

instead of having to change it to “Small Fish Count” or “Fry Fish Count”.

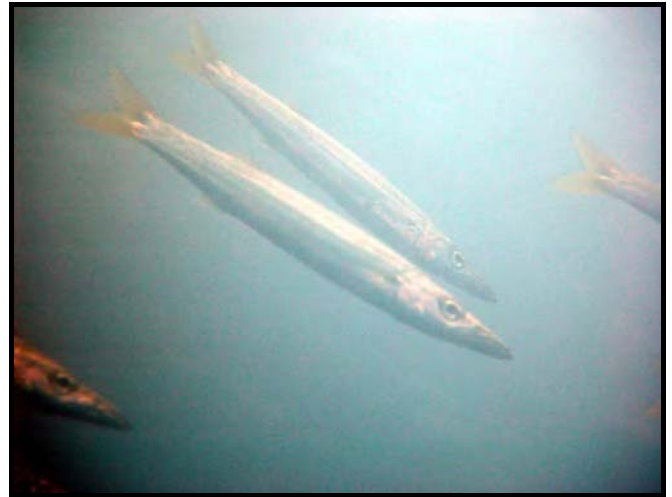


Fig. 4. Barracuda *Sphyraena* sp. at Shelter Island (Photo: Ng Wai Chuen).

Bibliography:

AFCD (Agriculture, Fisheries and Conservation Department) 2005. Conservation website <http://www.afcd.gov.hk/conservation/con_e.htm>

Sadovy, Y. & Cornish, A.S. (2000). *Reef fishes of Hong Kong*. Hong Kong University Press, Hong Kong.

More information about the Big Fish Count is available at [<http://www.wwf.org.hk>].

Environmental Life Science (ENS) students in Hainan, China

by Vivian Lam Yan Yan (ENS 2), Wan Pak Ho (ENS 3) and Fu Wing Kan (ENS 2)

On the 29 July 2005, a combination of 20 year 1 & 2 ENS students embarked on a once-in-a-lifetime journey to Bawangling National Nature Reserve, Hainan Island, to participate in the Hainan gibbon (*Nomascus* sp. cf. *nasutus hainanus*) conservation project of the Kadoorie Farm and Botanic Garden (KFBG). The trip was organized and led by Dr. Billy Hau, Mr. Yu Yat-Tung, Mr. Allen To and Ms. Maria Lo of DEB as well as Ms. Sharon Chow, Dr. Bosco Chan, Dr. Ng Sai Chit and Mr. Ken So of KFBG. Fifteen undergraduate students and 3 teachers from the Hainan Normal University also joined us in this trip. The trip was kindly supported by Wofoo Social Enterprises (see Box 1) (Fig. 1).

The trip came to a shaky start as a typhoon hit the island on the first two days, delaying our schedule and making the road to our anticipated gibbon observation point inaccessible. Luckily, after 3 hours of a much-feared bus ride (with ideas of falling into the swirling waters any moment popping into our

heads), we arrived at the Bawangling Nature Reserve safely, thanks to the courageous and skilled bus driver. The first programme was a valuable chance to listen to the experiences of the pioneers of conserving the Hainan gibbon, Prof. Liu Zhenhe and Mr. Hong Dewei who worked at the reserve in the 1970s and 1980s.



Fig.1. A group photo taken at Hainan Normal University, Haikou City.

Bawangling National Nature Reserve was established for the protection of the endangered Hainan gibbon (Fig. 2). Since the late 1990s, KFBG has been helping the Chinese authorities to enhance the protection of this highly endangered species. Only 13 gibbons appeared in Bawangling in the latest survey in 2004, the entire global population!



Fig. 2. Hainan gibbon *Nomascus* sp. cf. *nasutus hainanus* (Photo: Bawangling NNR).

During these 10 days, we mixed with the Hainan students and split into small groups for projects. We were shown around different areas of the nature reserve. Although we were unable to see the Hainan gibbons due to a landslide blocking the road to the gibbon site during the typhoon, none of us was disappointed as we saw many other interesting species, such as the very cute Rufous Woodpecker (Fig. 3). The field trips inside the reserve were also made so much more meaningful through the company of knowledgeable local staff who patiently guided and taught us along the way. We have learnt a great deal from these field trips which have broadened our interests to many different taxa groups.



Fig. 3. Rufous Woodpecker, *Celeus brachyurus*.

We also had a night safari on a seemingly peaceful and quiet night with stars illuminating the ebony black sky... and yet, we managed to see quite a lot of wildlife in action ranging from flying squirrels to frogs and even snakes! It was amazing that over 10 frog species were found in one single stream in the reserve (Fig. 4). There were a lot of 'firsts' on that night; the first time seeing so many stars, hiking at night, rushing at full speed into total darkness, staring at dozens of fireflies and close contact with a leech. Besides getting to know the biodiversity of this unique place, we also participated in a tree planting project which aims to restore a forest corridor linking two patches of forests utilized by the Hainan gibbons (Fig. 5).



Fig. 4. Hainan Cascade Frog, *Amolops hainanensis*.



Fig. 5. Setting off to plant native tree seedlings for the Hainan gibbon.

We visited several villages of different ethnic minorities in the surrounding areas of the nature reserve in the participatory rural appraisal (PRA) exercise. To many of us, the PRA exercise was a unique and valuable chance to understand the life of local villagers, some of whom are living below the poverty line. Poverty has led to serious conflict between resource users and nature conservation as many local people rely on biodiverse resources in the forest for food, fuel and medicine. The PRA exercise enabled us to understand and appreciate the difficulties in nature reserve management in rural China through first-hand experience (Figs. 6 & 7). Conservation is indeed not an easy or straightforward task! Determination, expertise and continuous hard work are vital. Conservation measures have to be done progressively with the cooperation of local villagers. Conservation is a much more challenging task than we had ever imagined.



Fig. 6. Conducting a PRA interview with a local villager outside his house.



Fig. 7. A picture with the village children (Photo: KFBG).

An amazing part of this trip is how it brought together many people with the same interest in, and passion for, conserving the environment. We truly enjoyed ourselves immensely and did not want this trip to end. We will always cherish this chance of spending quality time with experienced field experts who gave us lots of valuable advice on learning and careers. Working closely with the Hainan students on the group projects was also a very valuable experience. Being brought up in a different culture and environment, we have very different logic and working styles. It was not easy at the beginning but we soon found ways to compromise with each other. The Hainan students were very good hosts throughout the trip and took us around Haikou City during our last night in Hainan (Fig.8). We were all overwhelmed by their hospitality and passion and we have been keeping in touch through the Internet after the trip.



Fig. 8. Having fun in Haikou city!

This trip has highlighted the importance of learning outside the classroom. Despite our busy schedule at school, we will seize every opportunity to go out and explore (even if it is just in Lung Fu Shan behind the University!). This is just one of the good habits that the trip has helped us to develop. This trip

has also led us to think about the possibility of working in the Mainland for conservation. Lastly, this was no ordinary field study trip. Together, we've been through a whole array of new experiences, from tasting hairy vegetables to the joy of learning about new species and seeing the innocent smile of a village child. There is simply just way too much to tell. The trip was an experience of a lifetime for all of us.

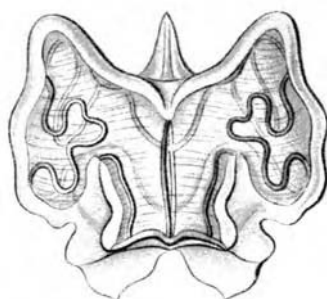
Box 1

Wofoo Social Enterprises (WSE)

Wofoo Social Enterprises (WSE), chaired by Mr. Joseph Lee, BBS, JP, gained momentum in the 1990s as a pioneer in advocating and supporting not-for-profit models of social services. WSE believes in the benefits of an entrepreneurial approach to providing social services because of its emphasis on customer-care and focus, efficiency and innovation - only through such manner can limited resources be mobilized and shared to meet the increasing demands of society. In parallel, WSE inspires individuals and organizations from different walks of life, sectors and groups, to contribute to Hong Kong's social services. On this common platform and joint belief, WSE can join hands with many to enhance "*Harmony amongst people to Build Prosperity of our Home and Country*", to illustrate the principle of "socializing social service."

After years of gestation, WSE is striving for further development based on its solid foundation of services in areas of Youth Development, Education, Elderly Care, Humanitarian Services, and Strategic Partnership. At present, the WSE Family includes Wofoo Foundation, Chinese Youth Exchange Centre (Hong Kong), Hong Kong Youth Institute, Warehouse Teenage Club, School of Continuing Family Education, Beijing International Committee for Chinese Orphans, Civic Heritage, W F Joseph Lee Primary School and Grace Nursing Home (Kowloon Tong and Tak Tin). W F Joseph Lee Primary School became the first primary school operating on the Direct Subsidy Scheme in the New Territories when it first admitted students for Fall 2002. Furthermore, Grace Nursing Home (Tak Tin) established another milestone for WSE and Hong Kong's social services when it became the first private sector operator of a Social Welfare Department tendered home in 2004.

Heading towards the future, WSE will continue to fulfill its corporate citizen duties and contribute to building a harmonious society and country by uniting societal energies, and providing social services of high quality.



Kadoorie Farm & Botanic Garden - wildlife updates & sightings

by Gary Ades, Roger Kendrick, Amanda Haig, Alex Grioni & Captain Wong

Wildlife recording, surveys and rehabilitation at Kadoorie Farm & Botanic Garden (KFBG) have produced a number of interesting and unusual records since March 2005. In this report, KFBG Fauna 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 staff and visitors. Many records are generated by the Security team on night shifts.

(1) The following sighting records from Kwun Yum Shan (KYS) and elsewhere in KFBG (Fig. 1) were posted between April and September 2005:

April 05

- 4 April, a bamboo snake at the Apiary.
- 7 April, three young wild boar piglets at Sign Post Corner.
- 15 April, two porcupines at the new Deer Haven.
- 21 April, a many banded krait snake near Great Falls arch.
- 30 April, a leopard cat above the Norman Wright Chicken Display

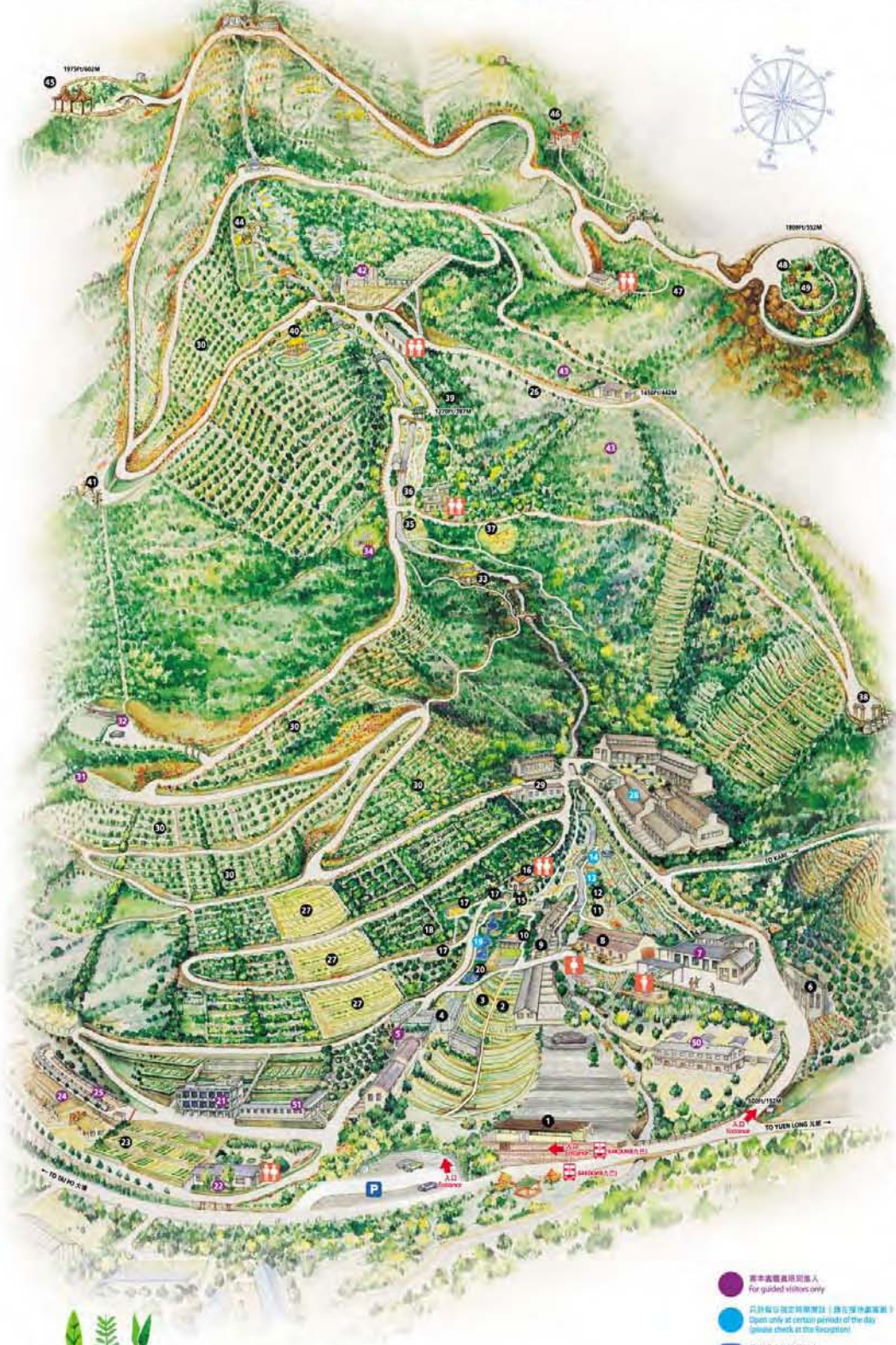
June 05

- 3 June, a group of rhesus macaque monkeys at Sign Post Corner.
- 11 June, a Chinese cobra near the Twin Pavillion.
- 12 June, three wild boar near Magnolia Falls.
- 18 June, a barking deer at the Butterfly Garden.
- 24 June, a rhesus macaque at the Native Tree Nursery.
- 27 June, several golden birdwing and common rose butterflies at the Butterfly Garden.
- 28 June, several golden birdwing, common rose and plain banded awl butterflies at the car park by Reception.
- 30 June, a common rat snake at the Native Tree Nursery.

July 05

- 9 July, a common wolf snake at Main Gate Security Cabin; several Indian moon moths (*Actias selene*) at KYS & Misha's Bungalow (Fig. 2).
- 13 July, a group of baby rhesus macaques below the Upper Canteen.
- 18 July, a small Indian civet at Magnolia Falls.
- 22 July, five wild boar piglets at Great Fall arch.
- 23 July, a mother wild boar with 8 piglets at the composting area.

嘉道理農場暨植物園 KADOORIE FARM AND BOTANIC GARDEN



- 1 接待處 Reception
- 2 生態園 Eco-garden
- 3 有機耕作及菜 Organic Farming Display
- 4 溫室 / 蘭花溫室 Greenhouses / Orchid Greenhouse
- 5 植物保育實驗室 / 植物標本室 Plant Conservation Laboratory / Herbarium
- 6 農產品售賣處 Farm Produce Sales Counter
- 7 行政辦公室 Administration Offices
- 8 豬舍 Pigties
- 9 野豬之家 Wild Boar Display
- 10 鯪魚園 Kwun Yum Garden
- 11 猛禽飛翔園 Raptor Flight Aviary
- 12 本土哺乳動物 Native Mammal Display
- 13 兩棲及爬行動物 Amphibian and Reptile House
- 14 淡水生態園 Streamlife Display
- 15 韋先生紀念花園 Walter Kerr Memorial Gardens
- 16 昆蟲館 Insect House
- 17 鸚鵡護理中心 Parrot Sanctuary
- 18 孔雀飼養園 Peafowl Enclosure
- 19 水鳥廊 Waterfowl Walkthrough
- 20 生態池塘 Wildlife Pond
- 21 辦公室 / 保育大樓 Offices / Conservation Building
- 22 職員飯堂 Staff Canteen
- 23 人工濕地污水處理系統 Constructed Wetland Wastewater Treatment System (CWWTS)
- 24 堆肥區 Composting Area
- 25 野生動物拯救中心 Wild Animal Rescue Centre (WARC)
- 26 鹿苑 Deer Haven
- 27 有機菜園 Organic Vegetable Terraces
- 28 諾曼生紀念園食及農業中心 The Norman Wright Memorial Chicken Display
- 29 艾先生猛禽護理中心 The Jim Ades Raptor Sanctuary
- 30 果園 Orchards
- 31 直升機坪 Helicopter Pad
- 32 米加別墅 Miha's Bungalow
- 33 大瀑布及彩虹亭 Great Falls and Rainbow Pavilion
- 34 蜜蜂園 Apiary
- 35 修女花園 Convent Garden
- 36 蕨類植物小徑 Fern Walk
- 37 蝶類園 Butterfly Garden
- 38 四柱擎天 Post Office Pillars
- 39 中藥園及茶園 Medicinal Herb Garden and Tea Garden
- 40 黃金亭 Golden Pavilion
- 41 世界主要城市之指示牌 Signpost Corner
- 42 蘭花亭 Orchid Haven
- 43 「農林聯合系統」農耕植物 Agroforestry Test Site
- 44 韋先生橋、龍亭及小瀑布 Kerr's Bridge, Dragon Pavilion and Little Falls
- 45 嘉道理兄弟紀念亭 The Kadoorie Brothers' Memorial Pavilion
- 46 胡振生先生紀念亭 The T.S. Woo Memorial Pavilion
- 47 禾稈路 Enkianthus Walk
- 48 古祭壇及熱氣粥 Ancient Altars and Hot Pots
- 49 鯪魚山頂峰 Kwun Yum Shan Summit
- 50 野生動物保育中心延伸設施 WARC Extension
- 51 辦公室/植物標本室 Offices / Herbarium and Specimen Room



地址 Address: 香港新界大埔林洞公路 Lam Kam Road, Tai Po, N.T., Hong Kong.
 電話 Tel: (852) 2488 1317/2483 9733 傳真 Fax: (852) 2488 3035 網址 Website: www.kfbg.org 電郵 Email: info@kfbg.org

- 導賞團職員陪同進入 For guided visitors only
- 只於每日指定時間開放 (請在預約時間前 15 分鐘查詢詳情) Open only at certain periods of the day (please check at the reception)
- 停車場 (包括預約) Coach & Car Park (advance booking essential)
- 入口 Entrance



Fig. 1. Map of KFBG showing areas and buildings referred to in the General Wildlife Sightings.

- 30 July, a mountain wolf snake near KARC road junction (Fig. 3).



Fig. 2. Common wolf snake (Photo: KFBG Security Team), July 2005.

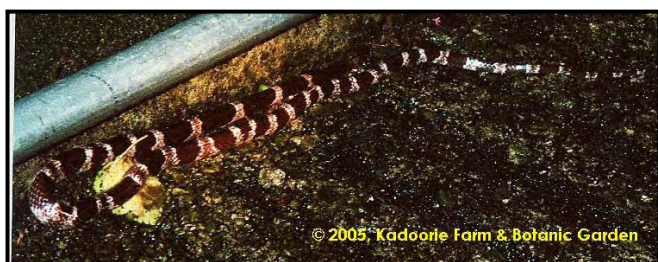


Fig. 3. Mountain wolf snake (Photo: KFBG Security Team), July 2005.

August 05

- 5 August, three porcupines at Magnolia Falls.
- 8 August, a small Indian civet at the Upper Canteen.
- 26 August, a baby python at KYS and a Chinese water snake at the Norman Wright Chicken Display.
- 28 August, two porcupines on the road above Misha's Bungalow and one porcupine below the Norman Wright Chicken House road.
- 29 August, a mother wild boar with 5 piglets at the Apiary.

September 05

- 5 September, three porcupines at the new Deer Haven.
- 11 September, a king cobra below the Twin Pavilion.
- 16 September, a masked palm civet at Signpost Corner; several male birdwing butterflies flying in the Butterfly Garden and a constable butterfly patrolling the summit of KYS; one adult wild boar and four piglets at the Upper Canteen.
- 18 September, a mother wild boar with five piglets near Misha's Bungalow.
- 27 September, a Chinese cobra near the Upper Canteen.

(2) Fauna Conservation Department Project News:

The monthly moth survey [RK] has been affected by poor weather on scheduled recording nights. Only on three evenings (in April, July and September) were recordings possible. April was not special in terms of unusual species. The recording on July 9, timed to coincide with the National Moth Night in the United Kingdom [1], resulted in 261

species being seen. Amongst the more interesting observations were a third Hong Kong record of *Calletaera postvittata* (Walker, 1861) (Geometridae, Ennominae), a couple of unusual species like *Warreniiplema fumicosta* (Warren, 1896) (Fig. 4) (Uraniidae, Epipleminae), the probably undescribed *Chiasmia* sp. indet. near *triangulata* (Fig. 5) (Geometridae, Ennominae), and the following species thought to be endemic to Hong Kong: *Sigilliclystis kendricki* Galsworthy, 1999 (Fig. 6) (Geometridae, Larentiinae); *Oglaa stygiana* Galsworthy, 1997; *Pangrapta bicornuta* Galsworthy, 1997; *Pangrapta roseinotata* Galsworthy, 1997; *Ugia purpurea* Galsworthy, 1997 (all Noctuidae, Calpinae); *Athetis hongkongensis* Galsworthy, 1997 (Noctuidae, Hadeninae) and *Luceria striata* Galsworthy, 1997 (Noctuidae, Strepsimaninae). In September several new species to Hong Kong were recorded; these were all small species whose identities are still being determined by microlepidoptera specialist M.J. Sterling in the U.K.



Fig. 4. *Warreniiplema fumicosta* (Photo: Roger Kendrick).



Fig. 5. *Sigilliclystis kendricki* (Photo: Roger Kendrick).

An additional moth record was made by AG of a mating pair of atlas moths (*Attacus atlas*) on September 16 at the WARC. This species (Fig. 7) is regularly recorded at KFBG, with adults seen in April, July and from late August through early October. The dramatic larvae are occasionally seen feeding on *Cinnamomum camphor* and *Ilex rotundifolia*.



Fig. 6. *Chiasmia* sp. indet. near *triantulata* (Photo: Roger Kendrick).



Fig. 7. Atlas moth at KFBG (Photo: Alex Grioni).

(3) Wild Animal Rescue Centre (WARC) – update

Interesting animal acceptances at the WARC include:

A juvenile Cuckoo had both the WARC team and local ornithologists guessing as to its correct identification. It is believed that it is in fact a Lesser Hawk Cuckoo (*Cuculus poliocephalus*) (Fig. 8). The bird had suffered minor injuries from what appeared to be a predator attack. Once recovered the bird was subsequently I.D. ringed and released. Feathers were taken for future DNA analysis.

A Crested Serpent Eagle was received with a fractured pelvis and is expected to make a full recovery. The bird was struck by a cross border truck on Sha Tau Kok Road. Fortunately for the bird, the driver stopped and reported the incident immediately to the AFCDD so that the bird could be rescued.

A pair of juvenile Black Bazas (*Aviceda leucophotes*) (Fig. 9) were found at Sham Shui Po Market. The origin of the birds is unknown but both were found with leg chains attached indicating that they were perhaps intended to be used for illegal falconry or the pet trade.



Fig. 8. Lesser hawk cuckoo prior to release at KFBG (Photo: Leo Ko)



Fig. 9. The juvenile black baza (Photo: Gary Ades).

Animal rehoming to organisations involved in captive breeding & conservation projects for those species included:

Siamang Gibbon (*Hylobates syndactylus*) was sent to Melaka Zoo, Malaysia in April 2005.

2 Spotted Linsangs (*Prionodon pardicolor*) were sent to Taiping Zoo, Malaysia, in May 2005.

2 Malaysian Painted River Turtle (*Callagur borneoensis*) were sent to Fuengirola (Malaga) Zoo, Spain in June 2005.

7 Malaysian Box Turtle (*Cuora amboinensis*) were returned to the AFCDD HK in July & August, for education programmes.

Below is a list of some of the animals received since February 2005 and that have been successfully rehabilitated and subsequently released (Fig. 10 & 11).

SPECIES	LOCATION FOUND	RELEASE DATE	RELEASE LOCATION
REPTILES			
Chinese Softshell Turtle <i>Pelodiscus sinensis</i>	Lam Tsuen	06.04.05	Nam San Wai
RAPTORS			
Common Buzzard <i>Buteo buteo</i>	Stubbs Road, HK	21.01.05	Mai Po
Common Buzzard <i>Buteo buteo</i>	Tuen Mun Highway	07.03.05	KFBG
Collard Scops Owl <i>Otus lempiji</i>	Pok Fu Lam Rd	15.03.05	KFBG
Common Buzzard <i>Buteo buteo</i>	Mai Po	24.03.05	Mai Po
Collard Scops Owl <i>Otus lempiji</i>	Sai Kung	04.05.05	Sai Kung (Return to Nest)
Black eared Kite <i>Milvus migrans lineatus</i>	Aberdeen CP	14.05.05	Aberdeen CP (Return to Nest)
Black eared Kite <i>Milvus migrans lineatus</i>	Kowloon Bay	18.05.05	Kowloon Bay
Collard Scops Owl <i>Otus lempiji</i>	Tuen Mun	18.05.05	Tai Po Kau
Collard Scops Owl <i>Otus lempiji</i>	Tsuen Kwan O	03.06.05	Kau Lung Hang
Black eared Kite <i>Milvus migrans lineatus</i>	Aberdeen	08.07.05	
Crested Goshawk <i>Accipiter trivirgatus</i>	Kowloon Bay	04.08.05	KFBG
Crested Goshawk <i>Accipiter trivirgatus</i>	HKUST Sai Kung	08.09.05	Tai Po Kau
Collard Scops Owl <i>Otus lempiji</i>	Tai Po	05.10.05	KFBG
OTHER BIRDS			
Oriental Tree Pipit <i>Anthus hodgsoni</i>	KFBG	14.01.05	KFBG
Grey-headed Lapwing <i>Vanellus cinereus</i>	Kam Tin	10.03.05	Kam Tin
Spotted Dove <i>Streptopelia chinensis</i>	Tai Po	07.04.05	KFBG
Koel <i>Eudynamis scolopacea</i>	TST	13.05.05	KFBG

Tree Sparrow <i>Passer montansus</i> x 2	KFBG	05.06.05	KFBG
Japanese White-eye <i>Zosterops japonica</i> x 3	KFBG	27.06.05	KFBG
Little Egret <i>Egretta garzetta</i> x 2	Tuen Mun	06.07.05	KFBG
Magpie Robin <i>Copsychus saularis adamsi</i>	Tai Po	25.08.05	KFBG
Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	KFBG	25.08.05	KFBG
Lesser Hawk Cuckoo <i>Cuculus poliocephalus</i>	Sai Kung	07.10.05	KFBG
Slaty Legged Crake <i>Rallina eurizonoides</i>	North Point	07.10.05	KFBG
Yellow Bittern <i>Ixobrychus sinensis</i>	Jordan	10.10.05	Kam Tin
MAMMALS			
Common Noctule Bat <i>Nyctalus noctula</i>	KFBG	16.06.05	KFBG
Common Noctule Bat <i>Nyctalus noctula</i> x 10	KFBG	23.06.05	KFBG
Common Noctule Bat <i>Nyctalus noctula</i> x 5	KFBG	25.06.05	KFBG



Fig. 10. Black-eared kite chick after being returned to its nest in Aberdeen Country Park (Photo: Leo Ko).

In June 2005, WARC staff were called on a number of occasions to deal with bats that had apparently been washed out of their roof roosts during heavy rain. A bat box was produced and erected near to the roost site to help place bats back in a dry environment. This had limited success, as some bats were young and were not being cared for by adults. It would be interesting to know how widespread this phenomenon is during torrential rain.



Fig. 11a. Collared Scops Owl chick after being returned to its nest in Sai Kung. Fig. 11b. The same owl chick, two weeks later (Photo: Leo Ko).

(4) Other News

South East Asian Lepidoptera
Conservation Symposium
Hong Kong 2006



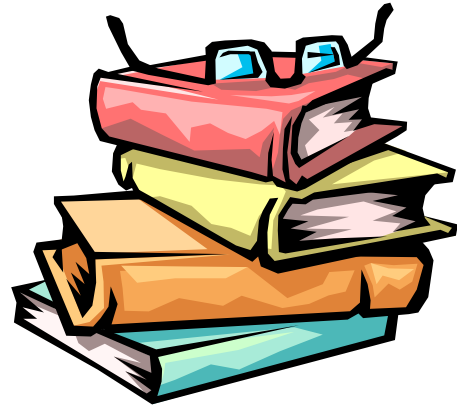
Between 4 and 8 of September 2006, KFBG will host the first South East Asian Lepidoptera Conservation Symposium. Unlike Europe, the Americas and Africa, there has been no regional or continental approach to the conservation of butterflies and moths in South East Asia. There exist various bodies at national and local levels, almost all non-governmental, that undertake conservation measures of some sort, and to varying degrees. By bringing such bodies together, an overall assessment of the state of Lepidoptera conservation in the region can begin.

The symposium is intended to bring together conservationists, academics, field workers, traders and natural history enthusiasts, to identify and agree upon regional conservation strategies and actions through a practical series of talks and workshops. The possibility of setting up a regional Lepidoptera conservation umbrella body will be explored.

Anyone interested in participating in the symposium should contact the Fauna Conservation Department at fauna@kfbg.org. Further information on the symposium is available on-line [2].

[1] <http://www.nationalmothnight.info>

[2] <http://asia.geocities.com/hkmoths/SEALCS2006/>



BOOK REVIEWS

A Field Guide to the Amphibians of Hong Kong

by Agriculture, Fisheries and Conservation Department (AFCD), 212 pages, softcover. Friends of the Country Parks and Cosmos Books Ltd., 2005.

This is the latest in a series of field guides to local fauna produced by AFCD, and is the first dedicated solely to Hong Kong amphibians (but do not be taken in by the disingenuous claim on the inner sleeve that this is the first comprehensive text on the amphibians of Hong Kong: the Urban Council's *Hong Kong Amphibians and Reptiles*, co-written by Hong Kong's leading herpetologists, was equally comprehensive, at least in the second edition (1998), and broke considerably more new ground than the current guide). It is a misfortune, therefore, that the formatting and layout of much of the book have departed so waywardly from the staid, sensible approaches adopted in AFCD's other recent field guides to dragonflies, butterflies and freshwater fish. Some hooligan at AFCD or Cosmos Books has been handed a profusion of frog photographs, drawings, snippets of text and an early version of Photoshop, and instructed to do their worst with it. What a migraine-inducing dog's dinner he or she has come up with.

Did I say "dog's dinner"? That is perhaps a little harsh. The book divides into five parts, of which the first three ('Introduction', 'Knowing More About Amphibians', and 'Observing Amphibians in the Wild') are relatively easy on the eye and do not induce any kinetic psychosis in the reader (although the mind does boggle somewhat at the assertion, made in the introduction, that amphibians evolved a mere forty million years ago, which would place their emergence considerably later than the demise of the dinosaurs which evolved from them; it is to be hoped that this misprint will be corrected in the second edition).

The field guide portion of the book, however – Part Four - is cluttered with a ghastly, clamorous jumble of overlapping amphibian photographs printed in oval-shaped frames or, even more jarringly, with the backgrounds entirely removed. Each

species is further illustrated, as if the profusion of photographs used were not already enough, with a drawing done in dorsal view. One wonders what additional information these drawings are supposed to impart. Much more useful are the distribution maps given for each species. The accompanying text provides a good deal of information on species characteristics, habitat, diet, distribution, conservation status and so forth, but falls short in the description of breeding habits. Given that one has a far greater chance of hearing frogs and toads than actually seeing them, it would have made a lot of sense for the authors to include a description of the breeding vocalizations of every species. Better still, why not include a CD-ROM of anuran calls, to be sold with the book? This would have represented a clear advance on the previous *Hong Kong Amphibians and Reptiles*.

Part Five of the book contains a worthy discussion of conservation issues facing Hong Kong amphibians. Indeed, it is clear that much earnest effort has been put into the entire book, and I take little pleasure in writing such a negative review. To finish on a high, therefore, *A Field Guide to the Amphibians of Hong Kong* represents an important improvement on its afore-mentioned predecessor in three regards: it is written in Chinese as well as English, it covers an additional species, *Amolops ricketti*, for the Hong Kong list, and it brings the nomenclature of several species up to date. It is certainly good value for its HK\$80 price tag, and I recommend it to non-epileptics as a useful addition to their libraries on Hong Kong wildlife.

Graham Reels

Tropical Rain Forests: An Ecological and Biogeographical Comparison.

by Richard Primack & Richard Corlett,
hardback. Blackwell Publishing, 2005.

It is probably true to say that most biologists unacquainted with tropical rain forests tend to think of them, in the abstract, as more or less homogeneous ecosystems aggregated around the world's equatorial regions. I certainly shared this over-generalised conception (although several weeks in the jungles of northern Borneo had begun to discline me to it), before the advent of *Tropical Rain Forests: An Ecological and Biogeographical Comparison*, and it was with great fascination and delight that I was able to read much of this illuminating book during a recent field trip to Sarawak.

Regular readers of *Porcupine!* will need no introduction to Richard Corlett – surely the most prolific and stimulating contributor to this newsletter since its inception – and will be aware of his long-standing interest in tropical Asian forests. Co-author Richard Primack is himself a distinguished botanist, based at Boston University, and author of *Essentials of Conservation Biology* (1993) – reputedly the first introductory text on this discipline. The two of them have combined their skills to produce a lively and absorbing

challenge to the orthodoxy that tropical rainforests are essentially similar the world over, by explicitly emphasizing the manifold ways in which such forests differ, floristically, faunistically and ecologically, from region to region. The underlying comparative theme is continued throughout the book, sustaining the reader's interest and inviting one to delve deeper.

The authors set their stall out in Chapter 1, identifying the areas of the world in which tropical rain forests occur, their geological histories and meteorological regimes, the reasons why there are differences (as well as the acknowledged similarities) in rain forests from region to region, and flagging up the functional consequences of such inter-regional differences. Less emphasis is given to differences in forests within the same region, although such differences certainly occur (one thinks of the various forest types – mangrove, kerangas, peat swamp, alluvial swamp, mixed dipterocarp and montane – and the different associated range of species, which may be found even within the tiny sultanate of Brunei).

The following chapter explores the different kinds of plant communities which characterize tropical rain forests in different regions – the familiar dipterocarp forests of south-east Asia, the bromeliad-rich forests of the neotropics, the relative abundance of the families Dichapetalaceae and Olacaceae in Africa. Clear regional differences in species diversity are also highlighted: forests in the neotropics coming out on top with on average just under 200 species per hectare, and Africa coming bottom with approximately half of that figure. Forest structure and timing of fruiting and flowering events also vary regionally, with concomitant effects on faunal assemblages.

These effects on key elements of the forest fauna (primates, carnivores and forest floor herbivores, birds, bats and gliders, and insects) are discussed at length in the ensuing five chapters, with particular reference to the ways in which the ecological roles of these groups vary regionally as a consequence of forest structure and floral composition. These chapters contain much revelatory information of absorbing interest to floristically-challenged rain forest neophytes (this reviewer included), who may be familiar with the fauna but have a slender grasp of how it relates to the flora.

The book rounds off, as all such books must do nowadays, with a discussion of threats to the various rain forests around the world. One emerges at the other end with a renewed concern for, and fascination with, these vibrant ecosystems, and I heartily recommend this book, while at the same time admitting that my knowledge of rain forests is inadequate to detect flaws which may seem evident to others. Perhaps the best recommendation I can make is that I have compared this book with T. C. Whitmore's 1998 offering, *An Introduction to Tropical Rain Forests*, and found that, to my mind at least, Primack & Corlett's book benefits by the comparison.

Graham Reels

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

An unusual behaviour of a **Squirrel** (*Callosciurus erythraeus*) was reported by Richard Corlett on 9 May 2005. A squirrel was seen catching flying termites (probably *Macrotermes*) with its front paws on the wooded slope above the Kadoorie Biological Sciences Building in HKU campus. Most of the termites were on the ground or low vegetation, but the squirrel also caught a couple from the air.

A juvenile **Leopard Cat** (*Prionailurus bengalensis*) was seen at close range by Yu Yat Tung on the Mai Po boardwalk on 18 April 2005.

An unusual locality for **Chinese White Dolphin** (*Sousa chinensis*) was reported by Yu Yat Tung; in Long Harbour, Sai Kung on 14 May 2005.

Robert Davison found a freshly road-killed **Javan Mongoose** (*Herpestes javanicus*) on the Brides Pool Road in the afternoon of 26 March 2005.



(Photo: Robert Davison)

A small **Javan Mongoose** (*Herpestes javanicus*) was seen in a garden at Sha Lan Village near Tai Po, at 3.00 pm on 5 June 2005 by Ed, Phil, Bill and Tanya Glenwright.

Two **Barking Deer** (*Muntiacus muntjac*) were seen close to the trail by Danny Lau and James Hui in Tai Po Kau Nature Reserve on the morning of 10 November 2005. They rushed

off noisily into the vegetation upon hearing the stepping sound of the observers.

Mike Bains found a number of Porcupine quills that were still attached to a small piece of skin (size: 5cm x 2cm) on the Hong Kong trail at approximately 500 m east of Peel Rise at around 6.00 pm on 11 October 2005.

Andrew Malone reported the sighting of a **Porcupine** on the path between Hatton Road and Pinewood Battery on 11 October 2005.

On 22 and 23 May 2005, Simon Dover saw **Porcupines** (at a distance of around 2-4 feet for up to 15 minutes) on the hillside above the stream at Tung Tze, Tai Po at around midnight. A porcupine was seen feeding on a plant on 22 May.

BIRDS

A **Mountain Tailor Bird** (*Orthotomus cuculatus*) was seen by Kwok Hon Kai at Tai Po Kau on 14 May 2005.

An unusual hunting behaviour for a **Long-tailed Shrike** (*Lanius schach*) was reported by Billy Hau. The whole process of the killing of an **Eurasian Skylark** (*Alauda arvensis*) was seen near a nullah in Long Valley in the afternoon of 11 October 2005: the Long-tailed Shrike killed the Skylark rapidly in a skillful way, then it tried to pick up the trophy and fly but the Skylark was apparently too heavy. Finally, the shrike gave up when it sensed that someone was watching on the other side of the bank.



(Photo: Billy Hau)

FISH

A locally rare wrasse, *Hologymnosus annulatus* (TL: 245 mm), was collected by Allen To on 16 Aug 2005 from Sai Kung Wet Market. The wrasse was caught by fishermen from Sharp Island. The wrasse had previously been sighted by Andy Cornish in Cape D'Aguiar and Lamma Island (Andy Cornish pers. comm.).



(Photo: Allen To)

Amphibians and Reptiles

6-8 **Hong Kong Newts** (*Paramesotriton hongkongensis*) were observed by David Sanderson in a stream pool at the head of Lam Tsuen Valley on 16 October 2005.

Ken Ching and Allen To found a dead **Yellow Pond Terrapin** (*Mauremys mutica*) (carapace length: 15 cm) trapped in a cage along a stream in Tsing Yi in the morning of 21 May 2005.



(Photo: Allen To)

Chinese Cobras (*Naja atra*) were seen by Ed, Phil, Bill and Tanya Glenwright on two occasions at Sha Lan Village, near Tai Po, in May 2005.

Fiona Chung and Eric Chan found a dead **Burmese Python** (*Python molurus*) at Tai Nam Chung Country Park.

Robert Davison reported the following sightings of snakes:

A dead **Checkered Keelback** (*Xenochrophis piscator*) was found at Tai Mei Tuk in mid-May. It was killed by a vehicle. A road-killed **Greater Green Snake** (*Ophedrys major*) was seen at Shing Mun Reservoir on 16 May 2005.

A number of **Common Rat Snakes** (*Ptyas mucosus*), including a large individual which was above 2.4 m, were seen in the campus of City University of Hong Kong in early wet season of 2005.

Ken Ching saw a **Malayan Box Turtle** (*Cuora amboinensis*) (carapace length: 12cm) in a freshwater wetland at Sha Kok Mei, Sai Kung, in the morning of 1 Sept 2005.

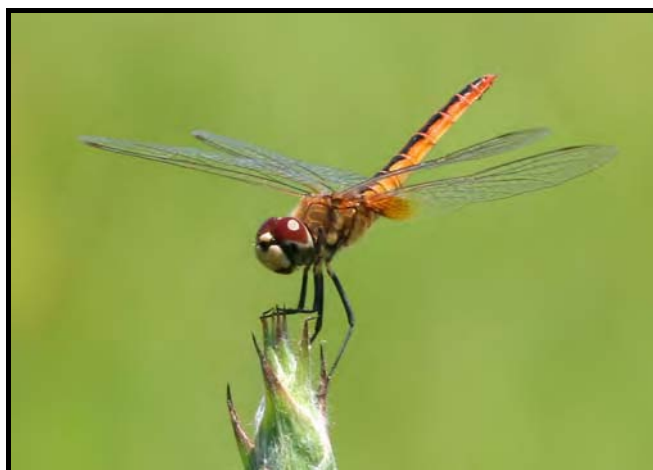


(Photo: Ken Ching)

INVERTEBRATES

On 22 May 2005, Christie Flowers and friends found more than five **Blue Bottle**, or **Portuguese Man O'War** (*Physalia physalis*), jellyfish washed up on Power Station beach, Yung Shue Wan, Lamma Island. The jellyfish are rare visitors to Hong Kong, and can deliver a painful sting even when dead. They are easily identified by being a blue-colour and having an air-filled float which keeps the main body of the jellyfish on the water surface (Submitted by Andy Cornish).

An uncommon dragonfly species *Macrodiplax cora* and two unusual damselfly species *Cercion calamorum dyeri* and *Pseudagrion microcephalum* were seen on 24 July, 8 May and 11 September 2005 respectively by Fion Cheng at Luk Keng marsh.



(Photo: Fion Cheung)

PLANTS

Tom Glenwright noticed that a *Sonneratia* was growing in the Tolo pond below Tai Po Kau. This suggests that this exotic mangrove species may be spreading in Hong Kong.

Recent Publications

Books, monographs etc.

AFCD (2005). *Field Guide to Hard Corals of Hong Kong*. Cosmos Books and Friends of the Country Parks, Hong Kong.

AFCD (2005). *A Field Guide to the Amphibians and Reptiles of Hong Kong*. Cosmos Books and Friends of the Country Parks, Hong Kong.

AFCD (2005). *Hong Kong Ecomap*. Cosmos Books and Friends of the Country Parks, Hong Kong.

AFCD (2005). *88 Hong Kong Natural Wonders*. Friends of the Country Parks, Cosmos Books, and the 88th Lions Clubs International Convention 2005 Host Committee, Hong Kong.

AFCD (2005). *New Walkers' Companion*. Cosmos Books and Friends of the Country Parks, Hong Kong.

Anon (2004) *Methodologies for terrestrial and freshwater ecological baseline surveys*. EIAO Guidance Note No. 10/2004. AFCD, Hong Kong.

Anon (2004). *Methodologies for marine ecological baseline surveys*. EIAO Guideline Note No. 11/2004. AFCD, Hong Kong.

Clarke, S. (2004). *Shark product trade in Hong Kong and mainland China and implementation of the CITES shark listings* TRAFFIC East Asia, Hong Kong.

IACM (2003). *A Green Tour of Macau*. Civic and Municipal Affairs Bureau - Department of Gardens and Green Areas, Macao.

Leung, S.F., Lee, E.H.K., Wong, C.K.F., & Cheung, A.P.L. (2004). *Commercial Crustaceans in Hong Kong*. AFCD, Hong Kong.

Lui, H.T.H. (2005). *Birdwatching in the Big City*. HK Discovery Ltd., Hong Kong.

Peart, M.R. (2005). *101 Series II - Hong Kong Landforms*. Cosmos Books and Friends of the Country Parks, Hong Kong.

Viney, C., Phillipps, K., & Lam, C.Y. (2005). *The Birds of Hong Kong and South China. 8th edition*. Information Services Department, Hong Kong.

Journal articles, book chapters and other published works

Aitchison, J.C. (2005). The great Indian Ocean Tsunami

disaster. *Gondwana Research* 8: 107-108.

Alongi, D.M., Pfitzner, J., Trott, L.A., Tirendi, F., Dixon, P., & Klumpp, D.W. (2005). Rapid sediment accumulation and microbial mineralization in forests of the mangrove *Kandelia candel* in the Jiulongjiang Estuary, China. *Estuarine Coastal and Shelf Science* 63: 605-618.

Aptroot, A. (2004). Two new ascomycetes with long gelatinous appendages collected from monocots in the tropics [Hong Kong]. *Studies in Mycology*: 307-311.

Brock, P.D., & Seow-Choen, F. (2000). The stick insects (Insecta: Phasmida) of Hong Kong. *Serangga* 5: 115-147.

Cai, L., Jeewon, R., & Hyde, K.D. (2005). Phylogenetic evaluation and taxonomic revision of *Schizothecium* based on ribosomal DNA and protein coding genes. *Fungal Diversity* 19: 1-21.

Cai, L., McKenzie, E.H.C., & Hyde, K.D. (2004). New species of *Cordana* and *Spadicoides* from decaying bamboo culms in China. *Sydowia* 56: 222-228.

Cai, L., Zhang, K.Q., & Hyde, K.D. (2005). *Ascoyunnania aquatica* gen. et sp. nov., a freshwater fungus collected from China and its microcyclic conidiation. *Fungal Diversity* 18: 1-8.

Chan, A.T. & Yeung, V.C.H. (2005). Implementing building energy codes in Hong Kong: energy savings, environmental impacts and cost. *Energy and Buildings* 37: 631-642.

Chan, B.K.K., & Hung, O.S. (2005). Cirral length of the acorn barnacle *Tetraclita japonica* (Cirripedia: Balanomorpha) in Hong Kong: Effect of wave exposure and tidal height. *Journal of Crustacean Biology* 25: 329-332.

Chan, B.P.L., Lee, K.S., Zhang, J.F., & Su, W.B. (2005). Notable bird records from Bawangling National Nature Reserve, Hainan Island, China. *Forktail* 21: 33-41.

Chan, K., & Morton, B. (2005). The reproductive biology of *Nassarius festivus* (Powys, 1835) (Gastropoda : Nassariidae) in relation to seasonal changes in temperature and salinity in subtropical Hong Kong. *Aquatic Ecology* 39: 213-228.

Chan, L.L., Hodgkiss, I.J., Lam, P.K.S., Wan, J.M.F., Chou, H.N., Lum, J.H.K., Lo, M.G.Y., Mak, A.S.C., Sit, W.H., & Lo, S.C.L. (2005). Use of two-dimensional gel electrophoresis to differentiate morphospecies of *Alexandrium minutum*, a paralytic shellfish poisoning toxin-producing dinoflagellate of harmful algal blooms. *Proteomics* 5: 1580-1593.

Chan, S.K.F., Cheung, K.S., Ho, C.Y., Lam, F.N., & Tang, W.S. (2005). Endemic species highlights - Romer's tree frog. *Hong Kong Biodiversity* 8: 5-8.

Chan, S.K.F., Cheung, K.S., Ho, C.Y., Lam, F.N., & Tang, W.S. (2005). A note on the pit vipers of Hong Kong. *Hong Kong*

Biodiversity 9: 10-11.

Chen, B., Mai, B.X., Duan, J.C., Luo, X.J., Yang, Q.S., Sheng, G.Y., & Fu, J.M. (2005). Concentrations of alkylphenols in sediments from the Pearl River estuary and South China Sea, South China. *Marine Pollution Bulletin* 50: 993-997.

Chen, H., Smith, G.J.D., Zhang, S.Y., Qin, K., Wang, J., Li, K.S., Webster, R.G., Peiris, J.S.M., & Guan, Y. (2005). H5N1 virus outbreak in migratory waterfowl. *Nature* 436: 191-192.

Cheung, K.H., & Gu, J.D. (2005). Chromate reduction by *Bacillus megaterium* TKW3 isolated from marine sediments. *World Journal of Microbiology & Biotechnology* 21: 213-219.

Cheung, S.C.H. (2004). Keeping the wetland wet: how to integrate natural and cultural heritage preservation. *Museum International* 56: 29-37.

Cheung, W.W.L., & Sadovy, Y. (2004). Retrospective evaluation of data-limited fisheries: a case from Hong Kong. *Reviews in Fish Biology and Fisheries* 14: 181-206.

Chow, G.K.L. (2005). Short-tailed shearwater, its first record in Hong Kong. *Hong Kong Biodiversity* 8: 9.

Chung, P.H. (2005). Epidemiology of spotted fever, scrub typhus and murine typhus in Hong Kong, 1995-2004 [Transmitted by rodent parasites]. *Public Health & Epidemiology Bulletin* 14: 1-5.

Cribb, P., Sun, M., & Barretto, G. (2004). *Phaius tankervilleae* and *P. wallichii* (Orchidaceae), a pair of confused species. *Kew Bulletin* 59: 547-554.

De Pirro, M., & Marshall, D.J. (2005). Phylogenetic differences in cardiac activity, metal accumulation and mortality of limpets exposed to copper: A prosobranch-pulmonate comparison. *Journal of Experimental Marine Biology and Ecology* 322: 29-37.

Dickman, M.D., Peart, M.R., & Yim, W.W.S. (2005). Benthic diatoms as indicators of stream sediment concentration in Hong Kong. *International Review of Hydrobiology* 90: 412-421.

Dobretsov, S., Dahms, H.U., & Qian, P.Y. (2005). Antibacterial and anti-diatom activity of Hong Kong sponges. *Aquatic Microbial Ecology* 38: 191-201.

Duong, L.M., Lumyong, S., Hyde, K.D., & Jeewon, R. (2004). *Emarcea castanopsidicola* gen. et sp. nov. from Thailand, a new xylariaceous taxon based on morphology and DNA sequences. *Studies in Mycology*: 253-260.

Fryar, S.C., Booth, W., Davies, J., Hodgkiss, I.J., & Hyde, K.D. (2005). Evidence of in situ competition between fungi in freshwater. *Fungal Diversity* 18: 59-71.

Fryxell, G.E., & Szeto, A. (2002). The influence of motivations

for seeking ISO 14001 certification: an empirical study of ISO 14001 certified facilities in Hong Kong. *Journal of Environmental Management* 65: 223-238.

Fung, J.C.H., Lau, A.K.H., Lam, J.S.L., & Yuan, Z. (2005). Observational and modeling analysis of a severe air pollution episode in western Hong Kong. *Journal of Geophysical Research-Atmospheres* 110: 9105-9105.

Gao, S.S., Heravi, S., & Xiao, J.Z. (2005). Determinants of corporate social and environmental reporting in Hong Kong: a research note. *Accounting Forum* 29: 233-242.

Geissmann, T. (2005). De Hainan-Schopfgibbon: der bedrohteste Menschenaffe der Welt. *Gibbon Journal* 1: 10-12.

Geissmann, T. (2005). Auf der Suche nach den letzten Gibbons von Hainan. *Gibbon Journal* 1: 18-22.

Gilchrist, P. (2005). Involvement of free-flying wild birds in the spread of the viruses of avian influenza, Newcastle disease and infectious bursal disease from poultry products to commercial poultry. *Worlds Poultry Science Journal* 61: 198-214.

Gu, J.D., Wang, Y., & Li, J. (2004). Degradation of the endocrine - disrupting dimethyl phthalate and dimethyl isophthalate by mangrove microorganisms. In *European Symposium on Environmental Biotechnology, Eseb 2004*, pp. 557-561.

Hau, B.C.H. (2005). Environmental education in protected areas in China. *Living Forests* 10: 16-18.

Hau, B.C.H., Dudgeon, D., & Corlett, R.T. (2005). Beyond Singapore: Hong Kong and Asian biodiversity. *Trends in Ecology & Evolution* 20: 281-282.

Hau, B.C.H., & So, K.K.Y. (2005). Propagating native tree species for forest rehabilitation in Hong Kong, China. In *Proceedings (CD-Rom) of the Symposium on Tropical Rainforest Rehabilitation and Restoration - Existing Knowledge and Future Direction, 26-28 July 2005, Kota Kinabalu, Sabah, Malaysia*. Yayasan Sabah Group, FAO, Sabah Forestry Department and WWF, Malaysia.

Hau, B.C.H., So, K.K.Y., Choi, K.C., & Cahau, R.Y.H. (2005). Using native tree and shrub species for ecological rehabilitation of man-made slopes in Hong Kong. In *Proceedings of the 25th Annual Seminar, Geotechnical Division, The Hong Kong Institute of Engineers, 4 May 2005, Hong Kong*, pp. 273-286. The Hong Kong Institute of Engineers, Hong Kong.

Ho, W.H., Yanna, Hyde, K.D., & Goh, T.K. (2005). *Endosporoideus* gen. nov., a mitosporic fungus on *Phoenix hanceana*. *Mycologia* 97: 238-245.

Hung, O.S., Gosselin, L.A., Thiagarajan, V., Wu, R.S.S., & Qian, P.Y. (2005). Do effects of ultraviolet radiation on microbial films have indirect effects on larval attachment of the

barnacle *Balanus amphitrite*? *Journal of Experimental Marine Biology and Ecology* 323: 16-26.

Ip, C.C.M., Li, X.D., Zhang, G., Wong, C.S.C., & Zhang, W.L. (2005). Heavy metal and Pb isotopic compositions of aquatic organisms in the Pearl River Estuary, South China. *Environmental Pollution* 138: 494-504.

Jaech, M.A., & Diaz, J.A. (2005). Revision of the Chinese species of *Hydraena* Kugelmann 1. Description of 15 new species of *Hydraena* s. str. from southeast China (Coleoptera: Hydranidae) [includes 2 new species from Hong Kong]. *Koleopterologische Rundschau* 75: 53-104.

Jim, C.Y. (2005). Outstanding remnants of nature in compact cities: patterns and preservation of heritage trees in Guangzhou city (China). *Geoforum* 36: 371-385.

Jin, I.W., Jiang, J.P., Xie, F., Zheng, Z.H., & Xu, J.X. (2005). Phylogenetic relationships among some species of *Amolops* inferred from 12S and 16S rRNA gene sequences. *Zoological Research* 26: 61-68.

Jing, H.M., Aitchison, J.C., Lacap, D.C., Peerapornpisal, Y., Sompong, U., & Pointing, S.B. (2005). Community phylogenetic analysis of moderately thermophilic cyanobacterial mats from China, the Philippines and Thailand. *Extremophiles* 9: 325-332.

Kan, B., & 29 other authors (2005). Molecular evolution analysis and geographic investigation of severe acute respiratory syndrome coronavirus-like virus in palm civets at an animal market and on farms. *Journal of Virology* 79: 11892-11900.

Ke, L., Yu, K.S.H., Wong, Y.S., & Tam, N.F.Y. (2005). Spatial and vertical distribution of polycyclic aromatic hydrocarbons in mangrove sediments. *Science of The Total Environment* 340: 177-187.

Ke, S.Z., Shi, Z., & Fang, H.H.P. (2005). Applications of two-phase anaerobic degradation in industrial wastewater treatment. *International Journal of Environment and Pollution* 23: 65-80.

Koenig, A., Zhang, T., Liu, L.H., & Fang, H.H.P. (2005). Microbial community and biochemistry process in auto sulfurotrophic denitrifying biofilm. *Chemosphere* 58: 1041-1047.

Kostylev, V.E., Erlandsson, J., Ming, M.Y., & Williams, G.A. (2005). The relative importance of habitat complexity and surface area in assessing biodiversity: Fractal application on rocky shores. *Ecological Complexity* 2: 272-286.

Kuiken, T., Leighton, F.A., Fouchier, R.A.M., LeDuc, J.W., Peiris, J.S.M., Schudel, A., Stohr, K., & Osterhaus, A. (2005). Public health - Pathogen surveillance in animals. *Science* 309: 1680-1681.

Kwok, B.L.H. & Lam, C.P. (2005). Rediscovery of the locally

rare seagrass *Ruppia maritima* in Hong Kong. *Hong Kong Biodiversity* 9: 7.

Kwok, W.P.W., & Tang, W.S. (2005). An introduction to common sesarminae crabs of Hong Kong. *Hong Kong Biodiversity* 9: 1-6.

Kwok, W.P.W., Yang, J.K.Y., Tong, P.Y.F., & Lam, C.P. (2005). Distribution of seagrasses in Hong Kong. *Hong Kong Biodiversity* 8: 12-14.

Lacap, D.C., Smith, G.J.D., Warren-Rhodes, K., & Pointing, S.B. (2005). Community structure of free-floating filamentous cyanobacterial mats from the Wonder Lake geothermal springs in the Philippines. *Canadian Journal of Microbiology* 51: 583-589.

Lai, M.Y., Shen, P.P., Zhao, Z., Zhou, H., & Gu, J.D. (2005). Concentrations of heavy metals in the benthic microgastropods *Sermyla riquetii* and *Stenothyra devalis* at the Mai Po Inner Deep Bay Ramsar site of Hong Kong. *Bulletin of Environmental Contamination and Toxicology* 74: 1065-1071.

Lai, P.C.C., & Wong, B.S.F. (2005). Effects of tree guards and weed mats on the establishment of native tree seedlings: Implications for forest restoration in Hong Kong, China. *Restoration Ecology* 13: 138-143.

Lam, J.C.W., Tanabe, S., Lam, M.H.W., & Lam, P.K.S. (2005). Risk to breeding success of waterbirds by contaminants in Hong Kong: evidence from trace elements in eggs. *Environmental Pollution* 135: 481-490.

Lam, K.S., Wang, T.J., Wu, C.L., & Li, Y.S. (2005). Study on an ozone episode in hot season in Hong Kong and transboundary air pollution over Pearl River Delta region of China. *Atmospheric Environment* 39: 1967-1977.

Lam, P., & McNaught, C. (2004). Evaluating educational websites: A system for multiple websites at multiple universities. In *Ed-Media 2004: World Conference on Educational Multimedia, Hypermedia & Telecommunications*, Vols. 1-7, pp. 1066-1073.

Lam, P.K.S., & Lam, M.H.W. (2004). Assessment of risks to the Mai Po Inner Deep Bay Ramsar site due to environmental contaminants. In *Wetlands Ecosystems in Asia: Function and Management*, Vol. 1, pp. 115-129.

Lau, K.W.K., Ng, C.Y.M., Ren, J.P., Lau, S.C.L., Qian, P.Y., Wong, P.K., Lau, T.C., & Wu, M. (2005). *Owenweeksia hongkongensis* gen. nov., sp. nov., a novel marine bacterium of the phylum 'Bacteroidetes'. *International Journal of Systematic and Evolutionary Microbiology* 55: 1051-1057.

Lau, S.C.K., Tsoi, M.M.Y., Li, X.C., Dobretsov, S., Plakhotnikova, Y., Wong, P.K., & Qian, P.Y. (2005). *Pseudoalteromonas spongiae* sp. nov., a novel member of the gamma-Proteobacteria isolated from the sponge *Mycale*

- adhaerens* in Hong Kong waters. *International Journal of Systematic and Evolutionary Microbiology* 55: 1593-1596.
- Lau, S.K.P., Woo, P.C.Y., Li, K.S.M., Huang, Y., Tsoi, H.W., Wong, B.H.L., Wong, S.S.Y., Leung, S.Y., Chan, K.H., & Yuen, K.Y. (2005). Severe acute respiratory syndrome coronavirus-like virus in Chinese horseshoe bats. *Proceedings of the National Academy of Sciences of the United States of America* 102: 14040-14045.
- Lau, S.S.Y., Giridharan, R., & Ganesan, S. (2005). Multiple and intensive land use: case studies in Hong Kong. *Habitat International* 29: 527-546.
- Lee, E.W.S., Hau, B.C.H., & Corlett, R.T. (2005). Natural regeneration in exotic tree plantations in Hong Kong, China. *Forest Ecology and Management* 212: 358-366.
- Lee, J.H.W., Hodgkiss, I.J., Wong, K.T.M., & Lam, I.H.Y. (2005). Real time observations of coastal algal blooms by an early warning system. *Estuarine Coastal and Shelf Science* 65: 172-190.
- Lee, W.H. & Choi, I.C. (2005). House crows (*Corvus splendens*) - notes on their population and control in Hong Kong. *Hong Kong Biodiversity* 8: 10-11.
- Leung, C.M., Jiao, J.J., Malpas, J., Chan, W.T., & Wang, Y.X. (2005). Factors affecting the groundwater chemistry in a highly urbanized coastal area in Hong Kong: an example from the Mid-Levels area. *Environmental Geology* 48: 480-495.
- Leung, K.M.Y., Bjorgesæter, A., Gray, J.S., Li, W.K., Lui, G.C.S., Wang, Y., & Lam, P.K.S. (2005). Deriving sediment quality guidelines from field-based species sensitivity distributions. *Environmental Science & Technology* 39: 5148-5156.
- Leung, Y.K., Ginn, E.W.L., Wu, M.C., Yueng, K.H., & Chang, W.L. (2004). Temperature projections for Hong Kong in the 21st century. *Hong Kong Meteorological Society Bulletin* 14: 21-48.
- Li, J.X., Gu, J.D., & Pan, L. (2005). Transformation of dimethyl phthalate, dimethyl isophthalate and dimethyl terephthalate by *Rhodococcus rubber* Sa and modeling the processes using the modified Gompertz model. *International Biodeterioration & Biodegradation* 55: 223-232.
- Li, X.Y., Cui, Y.H., Feng, Y.J., Xie, Z.M., & Gu, J.D. (2005). Reaction pathways and mechanisms of the electrochemical degradation of phenol on different electrodes. *Water Research* 39: 1972-1981.
- Liu, E.K.Y., Chan, Y.N., & Tsim, S.T. (2005). Breeding terns in Hong Kong - their prey. *Hong Kong Biodiversity* 8: 15-16.
- Liu, M. & Sadovy, Y. (2005). Habitat association and social structure of the chocolate hind, *Cephalopholis boenak* (Pisces : Serranidae : Epinephelinae), at Ping Chau Island, northeastern Hong Kong waters. *Environmental Biology of Fishes* 74: 9-18.
- Liu, Z.J., Zhang, J.Y., Ru, Z. Z., Lei, S.P., & Chen, L.J. (2004). Conservation biology of *Paphiopedilum purpuratum* (Orchidaceae). *Shengwu Duoyangxing* 12: 509-516.
- Louie, P.K.K., Chow, J.C., Chen, L.W.A., Watson, J.G., Leung, G., & Sin, D.W.M. (2005). PM2.5 chemical composition in Hong Kong: Urban and regional variations. *Science of the Total Environment* 338: 267-281.
- Lui, B.L.S., Shiu, Y.K., & Hau, B.C.H. (2005). Performance assessment of greening techniques on man-made slopes. In *Proceedings of the 25th Annual Seminar, Geotechnical Division, The Hong Kong Institute of Engineers, 4 May 2005, Hong Kong.*, pp. 273-286. The Hong Kong Institute of Engineers, Hong Kong.
- Mantel, S.K., & Dudgeon, D. (2005). Reproduction and sexual dimorphism of the palaemonid shrimp *Macrobrachium hainanensis* in Hong Kong streams. *Journal of Crustacean Biology* 25: 450-459.
- McKercher, B., Ho, P.S.Y., & du Cros, H. (2005). Relationship between tourism and cultural heritage management: evidence from Hong Kong. *Tourism Management* 26: 539-548.
- Miao, L., & Qian, P.Y. (2005). Antagonistic antimicrobial activity of marine fungi and bacteria isolated from marine biofilm and seawaters of Hong Kong. *Aquatic Microbial Ecology* 38: 231-238.
- Mingram, J., Nowaczyk, N., Schettler, G., Luo, X.J., Lu, H.Y., Liu, J.Q., & Negendank, J.F.W. (2004). A 78,000 year record of climatic changes from the South China coast - the Huguang Maar Lake (Huguangyan). In *Monsoon and Civilization* (eds Y. Yasuda & V. Shinde), pp. 51-59. Roli Books, New Delhi.
- Mitchell, A.J., Overstreet, R.M., Goodwin, A.E., & Brandt, T.M. (2005). Spread of an exotic fish-gill trematode: A far-reaching and complex problem. *Fisheries* 30: 11-16.
- Morton, B. (2005). Crocodiles and sharks. *Marine Pollution Bulletin* 50: 489-490.
- Morton, B. (2005). Biology and functional morphology of a new species of endolithic *Bryopa* (Bivalvia : Anomalodesmata : Clavagelloidea) from Japan and a comparison with fossil species of *Stirpulina* and other Clavagellidae. *Invertebrate Biology* 124: 202-219.
- Ng, K.L., & Obbard, J.P. (2005). Strategic environmental assessment in Hong Kong. *Environment International* 31: 483-492.
- Ng, P.K.L. & Chen, H.L. (2005). On two species of euxanthine crabs from the South China Sea, including a description of a new species of *Crosnierius* (Crustacea: Decapoda: Brachyura: Xanthidae) [from Hong Kong]. *Proceedings of the Biological*

Society of Washington 118: 319-325.

Nichol, J., & Wong, M.S. (2005). Detection and interpretation of landslides using satellite images. *Land Degradation & Development* 16: 243-255.

Normile, D. (2005). Virology: researchers tie deadly SARS virus to bats. *Science* 309: 2154-2155.

Peart, M.R. (2004). Nitrogen content of suspended matter in the Kam Tin River, Hong Kong. In *Sediment Transfer through the Fluvial System*, pp. 474-480.

Peart, M.R. (2004). Water supply and the development of Hong Kong. In *Basis of Civilization - Water Science*, pp. 23-30.

Peng, X., Zhang, G., Mai, B., Hu, J., Li, K., & Wang, Z. (2005). Tracing anthropogenic contamination in the Pearl River estuarine and marine environment of South China Sea using sterols and other organic molecular markers. *Marine Pollution Bulletin* 50: 856-865.

Photita, W., Taylor, P.W.J., Ford, R., Hyde, K.D., & Lumyong, S. (2005). Morphological and molecular characterization of *Colletotrichum* species from herbaceous plants in Thailand. *Fungal Diversity* 18: 117-133.

Pinruan, U., Sakayaroj, J., Jones, E.B.G., & Hyde, K.D. (2004). *Flammispora* gen. nov., a new freshwater ascomycete from decaying palm leaves. *Studies in Mycology*: 381-386.

Pointier, J.P., David, P., & Jarne, P. (2005). Biological invasions: the case of planorbid snails. *Journal of Helminthology* 79: 249-256.

Pointing, S.B., Pelling, A.L., Smith, G.J.D., Hyde, K.D., & Reddy, C.A. (2005). Screening of basidiomycetes and xylariaceous fungi for lignin peroxidase and laccase gene-specific sequences. *Mycological Research* 109: 115-124.

Prompttha, I., Lumyong, S., Lumyong, P., McKkenzie, E.H.C., & Hyde, K.D. (2005). A new species of *Anthostomella* on *Magnolia lillifera* from northern Thailand. *Mycotaxon* 91: 413-418.

Rainbow, P.S. & Wang, W.X. (2005). Trace metals in barnacles: the significance of trophic transfer. *Science in China Series C Life Sciences* 48 (Suppl. 1): 110-117.

Sadovy, Y. (2005). Trouble on the reef: the imperative for managing vulnerable and valuable fisheries. *Fish and Fisheries* 6: 167-185.

Sadovy, Y., & Domeier, M. (2005). Are aggregation-fisheries sustainable? Reef fish fisheries as a case study. *Coral Reefs* 24: 254-262.

Sadovy, Y., Randall, J.E., & Rasotto, M.B. (2005). Skin structure in six dragonet species (Gobiesociformes;

Callionymidae): interspecific differences in glandular cell types and mucus secretion. *Journal of Fish Biology* 66: 1411-1418.

Salin, K.R., Yohannan, T.M., & Nair, C.M. (2005). Fisheries and trade of seahorses, *Hippocampus* spp., in southern India [to Hong Kong, among other places]. *Fisheries Management and Ecology* 12: 269-273.

Salmon, C. (2004). Like froth on the sea. The world of pirates and seafarers in late imperial South China. *Journal of the Royal Asiatic Society* 14: 177-178.

Shao, H., Peng, S.L., Wei, X.Y., Zhang, D.Q., & Zhang, C. (2005). Potential allelochemicals from an invasive weed *Mikania micrantha* HBK. *Journal of Chemical Ecology* 31: 1657-1668.

Shek, C.T., & Chan, C.S.M. (2005). New bat species for Hong Kong - Greater Bamboo Bat (*Tylonycteris robustula*). *Hong Kong Biodiversity* 9: 9.

Shi, B.H., & Xia, X.H. (2005). Genetic variation in clones of *Pseudomonas pseudoalcaligenes* after ten months of selection in different thermal environments in the laboratory. *Current Microbiology* 50: 238-245.

Shi-xiong, Y. (2005). Taxonomic treatment of Chinese *Polyspora* Sweet (Theaceae) [previously included in *Gordonia*]. *Journal of Tropical and Subtropical Botany* 13: 363-365.

Shu, W.S., Ye, Z.H., Zhang, Z.Q., Lan, C.Y., & Wong, M.H. (2005). Natural colonization of plants on five lead/zinc mine tailings in Southern China. *Restoration Ecology* 13: 49-60.

So, K.K.Y., & Hau, B.C.H. (2005). Native tree planting scheme for secondary schools in Hong Kong, China. In *Proceedings (CD-Rom) of the Symposium on Tropical Rainforest Rehabilitation and Restoration - Existing Knowledge and Future Direction, 26-28 July 2005, Kota Kinabalu, Sabah, Malaysia*. Yayasan Sabah Group, FAO, Sabah Forestry Department and WWF, Malaysia.

Sodhi, N.S., Koh, L.P., Brook, B.W., & Ng, P.K.L. (2005). Response to Hau *et al*: Beyond Singapore: Hong Kong and Asian biodiversity. *Trends in Ecology & Evolution* 20: 282-283.

Sturm-Ramirez, K.M., Hulse-Post, D.J., Govorkova, E.A., Humberd, J., Seiler, P., Puthavathana, P., Buranathai, C., Nguyen, T.D., Chaisingh, A., Long, H.T., Naipospos, T.S.P., Chen, H., Ellis, T.M., Guan, Y., Peiris, J.S.M., & Webster, R.G. (2005). Are ducks contributing to the endemicity of highly pathogenic H5N1 influenza virus in Asia? *Journal of Virology* 79: 11269-11279.

Su, Y.C.F., Mols, J.B., Takeuchi, W., Kessler, P.J.A., & Saunders, F.M.K. (2005). Reassessing the generic status of *Petalolophus* (Annonaceae): Evidence for the evolution of a distinct sapromyophilous lineage within *Pseuduvaria*. *Systematic Botany* 30: 494-502.

- Tam, N.F.Y. (2004). Conservation and uses of mangroves in Hong Kong and Mainland China. In *Wetlands Ecosystems in Asia: Function and Management*, Vol. 1, pp. 161-182.
- Thiyagarajan, V., Hung, O.S., Chiu, J.M.Y., Wu, R.S.S., & Qian, P.Y. (2005). Growth and survival of juvenile barnacle *Balanus amphitrite*: interactive effects of cyprid energy reserve and habitat. *Marine Ecology Progress Series* 299: 229-237.
- Thiyagarajan, V., Soo, L., & Qian, P.Y. (2005). The role of sediment organic matter composition in larval habitat selection by the polychaete *Capitella* sp I. *Journal of Experimental Marine Biology and Ecology* 323: 70-83.
- Tsoi, K.H., Wang, Z.Y., & Chu, K.H. (2005). Genetic divergence between two morphologically similar varieties of the kuruma shrimp *Penaeus japonicus*. *Marine Biology* 147: 367-379.
- Van Dijk, P.P., Tordoff, A.W.J., Fellowes, J., Lau, M., & Ma, J. (2004). Indo-Burma [includes Hong Kong]. In *Hotspots Revisited* (eds R.A. Mittermeier *et al.*), pp. 322-330. CEMEX, Mexico City.
- Van Ryckegem, G., & Verbeken, A. (2005). Fungal ecology and succession on *Phragmites australis* in a brackish tidal marsh [Mai Po]. I. Leaf sheaths. *Fungal Diversity* 19: 157-187.
- Vijaykrishna, D., Mostert, L., Jeewon, R., Gams, W., Hyde, K.D., & Crous, P.W. (2004). *Pleurostomophora*, an anamorph of *Pleurostoma* (Calosphaerales), a new anamorph genus morphologically similar to *Phialophora*. *Studies in Mycology*: 387-395.
- Wang, D.Z., & Hsieh, D.P.H. (2005). Growth and toxin production in batch cultures of a marine dinoflagellate *Alexandrium tamarense* HK9301 isolated from the South China Sea. *Harmful Algae* 4: 401-410.
- Wang, Y.L., & Gu, J.D. (2005). Influence of temperature, salinity and pH on the growth of environmental *Aeromonas* and *Vibrio* species isolated from Mai Po and the Inner Deep Bay Nature Reserve Ramsar site of Hong Kong. *Journal of Basic Microbiology* 45: 83-93.
- Weerasooriya, A.D., & Saunders, R.M.K. (2005). The genus *Mitrephora* (Annonaceae) in Cambodia, Laos, and Vietnam. *Systematic Botany* 30: 248-262.
- Williams, G.A., De Pirro, M., Leung, K.M.Y., & Morritt, D. (2005). Physiological responses to heat stress on a tropical shore: the benefits of mushrooming behaviour in the limpet *Cellana grata*. *Marine Ecology Progress Series* 292: 213-224.
- Wong, A.K.C. & Leung, P.C. (2005). Two moth species new to Hong Kong discovered in AFCD's ecological surveys [*Antheraea pernyi* and *Gasterocome pannsaria*]. *Hong Kong Biodiversity* 9: 8.
- Wong, C.K., Hung, P., Lee, K.L.H., & Kam, K.M. (2005). Study of an outbreak of ciguatera fish poisoning in Hong Kong. *Toxicon* 46: 563-571.
- Wong, C.K., & Wong, C.K. (2004). Study of phytoplankton characteristics in Tolo Harbour, Hong Kong, by HPLC analysis of chemotaxonomic pigments. *Journal of Applied Phycology* 16: 469-476.
- Wong, E.Y.H. (2005). Control of *Mikania micrantha* and habitat management at Sites of Special Scientific Interest. *Hong Kong Biodiversity* 9: 14-16.
- Wong, H.L., Giesy, J.P., Siu, W.H.L., & Lam, P.K.S. (2005). Estrogenic and dioxin-like activities and cytotoxicity of sediments and biota from Hong Kong mudflats. *Archives of Environmental Contamination and Toxicology* 48: 575-586.
- Wu, R.S.S., & Or, Y.Y. (2005). Bioenergetics, growth and reproduction of amphipods are affected by moderately low oxygen regimes. *Marine Ecology Progress Series* 297: 215-223.
- Xia, L., & Shao, Y. (2005). Modelling of traffic flow and air pollution emission with application to Hong Kong Island. *Environmental Modelling & Software* 20: 1175-1188.
- Xing, F.W., Wang, F.G., Chen, H.F., & Chau, L.K.C. (2005). *Begonia hongkongensis* (Begoniaceae), a new species from Hong Kong. *Annales Botanici Fennici* 42: 151-154.
- Xu, X.R., Li, H.B., & Gu, J.D. (2005). Biodegradation of an endocrine-disrupting chemical di-n-butyl phthalate ester by *Pseudomonas fluorescens* B-1. *International Biodeterioration & Biodegradation* 55: 9-15.
- Xu, X.R., Li, H.B., Gu, J.D., & Li, X.Y. (2005). Kinetics of the reduction of chromium(VI) by vitamin C. *Environmental Toxicology and Chemistry* 24: 1310-1314.
- Xu, X.R., Li, H.B., Wang, W.H., & Gu, J.D. (2005). Decolorization of dyes and textile wastewater by potassium permanganate. *Chemosphere* 59: 893-898.
- Xu, X.R., Li, H.B., Wang, W.H., Peng, A., & Gu, J.D. (2005). Determination of methylmercury fluxes across the air-water and air-soil interfaces by gas chromatography with electron capture detection. *Analytical and Bioanalytical Chemistry* 381: 1631-1634.
- Yam, R.S.W., & Dudgeon, D. (2005). Stable isotope investigation of food use by *Caridina* spp. (Decapoda: Atyidae) in Hong Kong streams. *Journal of the North American Benthological Society* 24: 68-81.
- Yang, L., Cai, L.Z., Tong, Y.G., & Yang, G. (2005). Heavy metal contents on Futian tidal flat in Shenzhen Bay and their effect on macrobenthos. *Journal of Oceanography in Taiwan Strait* 24: 156-164.

Ye, Y., Tam, N.F.Y., Lu, C.Y., & Wong, Y.S. (2005). Effects of salinity on germination, seedling growth and physiology of three salt-secreting mangrove species. *Aquatic Botany* 83: 193-205.

Ye, Y., Wong, Y.S., & Tam, N.F.Y. (2005). Acclimation of a dominant mangrove plant (*Kandelia candel*) to soil texture and its response to canopy shade. *Hydrobiologia* 539: 109-119.

Yip, D.Y., & Cheung, D. (2005). Teachers' concerns on school-based assessment of practical work. *Journal of Biological Education* 39: 156-162.

Yip, J.K.L., Ngar, Y.N., Yip, J.Y., Liu, E.K.Y., & Lai, P.C.C. (2005). AFCD survey of local *fung shui* woods. *Hong Kong Biodiversity* 8: 2-4.

Yu, K.F., Zhao, J.X., Wei, G.J., Cheng, X.R., & Wang, P.X. (2005). Mid-late Holocene monsoon climate retrieved from seasonal Sr/Ca and delta O-18 records of *Porites lutea* corals at Leizhou Peninsula, northern coast of South China Sea. *Global and Planetary Change* 47: 301-316.

Yu, Y.T. (2005). Longevity record of a colour-ringed Black-faced Spoonbill *Platalea minor*. *Forktail* 21: 176-177.

Yu, Y.T., & Swennen, C. (2005). Food-begging by a juvenile black-faced spoonbill at a wintering site. *Journal of the Yamashina Institute for Ornithology* 37: 43-44.

Zettel, H. (2004). Revision of the *Timasius chinai* species group (Insecta; Heteroptera: Hebridae), with descriptions of ten new species. [Including *T. gracilis* sp. nov. from HK]. *Insect Systematics and Evolution* 35: 241-260.

Zhang, T., Liu, Y., & Fang, H.H.P. (2005). Effect of pH change on the performance and microbial community of enhanced biological phosphate removal process. *Biotechnology and Bioengineering* 92: 173-182.

Zhang, X.X., Wan, Y.Q., Cheng, S.P., Sun, S.L., Zhu, C.J., Li, W.X., Zhang, X.C., Wang, G.L., Lu, J.H., Luo, X., & Gu, J.D. (2005). Purified terephthalic acid wastewater biodegradation and toxicity. *Journal of Environmental Sciences-China* 17: 876-880.

Zhang, Z.X., Cheng, D.M., Jiang, D.X., & Xu, H.H. (2004). Spread, damage and control methods of *Brontispa longissima* [which has recently spread to HK]. *Kunchong Zhishi* 41: 522-526.

Zhu, H., Cai, L., Hyde, K.D., & Zhang, K.Q. (2005). A new species of *Acrogenospora* from submerged bamboo in Yunnan, China. *Mycotaxon* 92: 383-386.

Zhu, H., & Roos, M.C. (2004). The tropical flora of southern China and its affinity to Indo-Malesian flora. *Telopea* 10: 639-648.

Porcupine! No. 33

November 2005

ISSN 1025-6946

Chief Editors: Yvonne Sadovy
Richard Corlett

Assistant Editors: Rachel Wong
Laura Wong

Wild Corner: Eric Chan
Danny Lau

Published by the Department of Ecology & Biodiversity, The University of Hong Kong.

Article submissions:
Porcupine!

Ms Eva Tam, Department of Ecology & Biodiversity The University of Hong Kong, Pokfulam Road, Hong Kong.

Tel: 22990612 Fax: 25176082

Email address:
Ecology@hkucc.hku.hk

Website:
www.hku.hk/ecology/porcupine/

Guidelines for contributions :

All contributions are welcomed. Any original article related to natural history, conservation or ecological research in Hong Kong will be considered for publication. Authors of long articles should send their work as a Word file, either by post (on disk, with hard copy attached) or by email. Original artwork should be sent by post (please indicate if return of material is required). Short articles (less than a hundred words) may be faxed or posted.

Articles from *Porcupine!* may be reprinted without permission. Please acknowledge source and author.

All authors can be contacted through *Porcupine!* unless alternative contact details have been provided.