



# Vegetation and Moth Survey Report – Hoi Ha, Sai Kung, Hong Kong

September 2012 (1<sup>st</sup> edition)



Kadoorie Farm and Botanic Garden Publication Series

Number 10



# Vegetation and Moth Survey Report – Hoi Ha, Sai Kung, Hong Kong (1<sup>st</sup> edition)

September 2012

## Editors

Gary ADES, Roger KENDRICK, Sai-chit NG and Tony NIP

## Contents

Contents .....	1
Executive Summary .....	2
Background and Introduction .....	3
Methods .....	3
Results and Discussion .....	4
Recommendations.....	6
References .....	6
Figures .....	7
Figure 1. Locations of the moth traps for the survey conducted on 13 November 2011. ....	8
Figure 2. Vegetation types identified in the present study: Feng-shui Forest (FSF), Secondary Forest (SF), Shrubland (S), Coastal Vegetation (C), Village Vegetation (V), Freshwater Wetland (W). ....	9
Figure 3. Interior of the Feng-shui Forest with late-successional epiphytic bird-nest fern, <i>Neottopteris nidus</i> .....	10
Figure 4. Degraded part of the Feng-shui Forest overgrown with climbers and with open canopy. ....	11
Figure 5. Grassy wetland vegetation in Hoi Ha. ....	12
Figure 6. <i>Aquilaria sinensis</i> recorded during the present survey.....	13
Figure 7. <i>Rhododendron simsii</i> recorded during the present survey.....	14
Figure 8. <i>Entada phaseoloides</i> recorded during the present survey. ....	15
Figures 9.1 (above) & 9.2 (below). Locally rare <i>Morinda cochinchinensis</i> recorded during the present survey .....	16
Figure 10. Locally rare <i>Vitis tsoi</i> recorded during the present survey. ....	17
Figure 11. <i>Sargentodoxa cuneata</i> recorded during the present survey. ....	17
Figure 12. <i>Toona rubriflora</i> , globally restricted in range, recorded during the present survey. ....	18
Tables .....	19
Table 1. Plant species recorded from Hoi Ha on 28 March 2011. ....	20
Table 2. Moth (Lepidoptera) species recored during the survey conducted on 13 November 2011.....	30
Table 3. Moth species richness for each survey site .....	34

## Copyright

© 2012, Kadoorie Farm & Botanic Garden Corporation, all rights reserved.

## For enquiries about this report, please contact:

Fauna Conservation Department,  
Kadoorie Farm and Botanic Garden Corporation  
Lam Kam Road, Tai Po, N.T.  
Hong Kong Special Administrative Region  
[fauna@kfbg.org](mailto:fauna@kfbg.org)

## Document citation

Kadoorie Farm and Botanic Garden. 2012. *Vegetation and Moth Survey Report – Hoi Ha, Sai Kung, Hong Kong*.  
Kadoorie Farm and Botanic Garden, Hong Kong Special Administrative Region. 34pp.

Cover photo: Hoi Ha Wan Marine Park

## Executive Summary

Vegetation (Flora) and moth (Lepidoptera) surveys were conducted in March and November 2011, respectively. This report contains results of these surveys and was compiled to contribute toward our present ecological knowledge of the locality. It is envisaged that additional information covering other faunal groups will be collated in future and further add to this knowledge.

Six vegetation types were identified in the Hoi Ha study area, including a patch of feng-shui forest that is partly degraded, coastal vegetation with mangrove species, and freshwater wetland. 225 vascular plant species were recorded, including three locally protected species (*Aquilaria sinensis*, *Pavetta hongkongensis*, *Rhododendron simsii*), one critically endangered species (*Diospyros vaccinioides*), one locally very rare species (*Entada phaseoloides*), three locally rare species (*Jasminum sinensis*, *Morinda cochinchinensis* and *Vitis tsoi*), and one globally restricted species (*Toona rubriflora*). Abundance criteria follow Corlett *et al.* (2000)

The moth survey recorded a total of 77 species and several species of conservation interest were discovered. Based on the species number observed, it is considered that the moth diversity is relatively high at Hoi Ha compared to other trapping localities in Hong Kong. The relatively high vegetation diversity of the area probably contributes to the results (i.e. woodland, coastal vegetation and mangrove).

## Background and Introduction

Hoi Ha's coastal waters in Sai Kung are famous for the coral community that they support. The coastline and waters have been zoned as a Marine Park since 1996. This status, unfortunately, provides only limited restriction to the rural development in the village area and its vicinity. New small house developments proposed at this locality may jeopardize the plant community and thus the associated fauna. Due to concerns about the future development of this area preliminary rapid plant and moth surveys were undertaken to provide a clearer picture regarding habitat types and species richness of the Hoi Ha area, also to provide basis for monitoring and further conservation action.

## Methods

### *Survey (Vegetation)*

A site visit by KFBG botanists was undertaken on 28 March 2011 from 10:00 am to 3:15 pm. Vegetation types were recorded and all vascular plant species encountered during the survey were visually identified to the lowest possible taxonomic level. Several specimens were collected during the survey and were deposited at the KFBG herbarium. Nomenclature of plants follows the *Flora of Hong Kong* Vol. 1 to 3 (Hong Kong Herbarium & South China Botanical Garden 2007, 2008 & 2009), *Checklist of Hong Kong Plants* (Hong Kong Herbarium, 2004), and the online *Flora of China* (efloras, 2011). Relative abundance in Hong Kong stated for selected species follows Corlett *et al.* (2000), unless otherwise stated.

### *Survey (Moths - Lepidoptera)*

A moth survey was conducted on 13 November 2011 using two light traps (locations of these traps are at **Figure 1**). Survey details are presented below:

<b>Site name:</b>	Hoi Ha Wan, Sai Kung Country Park
<b>UTM grid reference:</b>	50Q KK 250 863; 50Q KK 251 863
<b>Habitat type:</b>	<ul style="list-style-type: none"><li>- Site 1: surrounded by village vegetation, coastal vegetation and woodland; adjacent to the beach</li><li>- Site 2: marshy grassland, backing on to the beach and bordered with coastal shrubland, including a few mangrove; adjacent to a stream</li></ul>
<b>Date recorded:</b>	13 November 2011
<b>Method:</b>	125W mv "Robinson" trap

All species were identified based upon Kendrick (2002), with the list order and nomenclature based upon the Hong Kong Moth Recorder database maintained by the author.

## Results and Discussion

### Vegetation

Vegetation types usually vary continuously with many intermediate types present. Nevertheless, six vegetation types (feng-shui forest, secondary forest, shrubland, coastal vegetation, village vegetation, and freshwater wetland) could be identified (**Figure 2**).

Feng-shui forest (FSF) refers to historic forest behind villages and next to shrines managed primarily for feng-shui purposes. At the study site, feng-shui forest was identified behind the main cluster of village houses and behind the lime kilns east of the village. Trees reach a considerable size up to 50 cm dbh (diameter at breast height) and 20 m tall. The origin of the forest could not be traced but judging from the rich species composition made up almost exclusively by wild native species, and with the occurrence of an understorey community dominated by late-successional species such as *Ardisia hanceana*, *A. quinquegona*, and *Neottopteris nidus* (**Figure 3**), and rare liana such as *Entada phaseoloides* and *Morinda cochinchinensis*; this feng-shui wood may have been old growth secondary forest that has received long term protection. Occurrence of old trees of native fruit tree species, such as *Dimocarpus longans* and *Litchi chinensis* also suggest the long history of human management. Part of the core portion of the feng-shui forest has been encroached by human activities and hence it is fairly disturbed and overgrown with climbers (**Figure 4**). The feng-shui forest is contiguous with secondary forest and hence it is difficult to define a boundary between the two vegetation types.

Secondary forest (SF) is recently regenerated from shrubland or abandoned farmland. It forms a structurally intermediate transition between the feng-shui forest and the shrubland. Species density and species richness of secondary forest is generally less than feng-shui forest and tends to be dominated by *Schefflera heptaphylla*, *Schima superba*, *Syzygium hancei* and *Machilus pauhoi*. Trees are also generally smaller with most of the trees about 20-30 cm in dbh. Understorey and liana are also less well-developed compared to feng-shui forests. Secondary forests developed from abandoned farmland tend to be dominated by *Symplocos cochinchinensis* var. *laurina*, *Syzygium hancei* and *Schefflera heptaphylla*.

The shrubland (S) is dominated by shrubs about 1.5 to 3 m tall, although there are scattered trees that are 4 to 6 m tall. Shrubland is present on exposed hillsides on the headland near the World Wide Fund (WWF) Education Center, further up the hillside above the secondary forest and feng-shui forest, and along the stream on the west of the village. Dominant species include *Gordonia axillaris*, *Rhodomyrtus tomentosa*, *Litsea rotundifolia* var. *oblongifolia*, *Melastoma sanguineum* and *Rhus succedanea*. The understory layer is difficult to identify here. Although there are many climber species, the species composition is rather different from that of the lianas in feng-shui forest.

Coastal vegetation (C) can be found at the back of the rocky and sandy seashore and at the intertidal zone of the more sheltered sand flat, where mangrove species were found. It gradually merges into shrubland, secondary forest and feng-shui forest in the landward direction. This vegetation type physically resembles shrubland or secondary forest with trees less than 15 cm dbh and less than 3 m tall. Most of the woody plants are 1.5 to 2 m tall. Because of the unstable coastal substratum and wave actions, trees here often showed tilted and irregularly branched trunks. Dominant species here include *Hibiscus tiliaceus*, *Cerbera manghas*, *Paliurus ramosissimus*, *Excoecaria agallocha*, *Aegiceras corniculatum* and *Kandelia obovata*.

Village vegetation (V) refers to the woody vegetation between village houses. It includes fruit trees planted by villagers as well as secondary forest species regenerated (probably naturally) on small pieces of abandoned farmland lots between village houses.

Freshwater wetland (W) includes grassy vegetation developed from waterlogged soil which was previously paddy farmland (**Figure 5**). This habitat type was found between the main stream and the village. In addition to herbs, closed canopy of *Cleistocalyx operculatus*, *Glochidion hirsutum*, and *G. zeylanicum* up to 4-6 m tall, was also discovered in areas contiguous with the secondary forest. Regular disturbance by water buffalo would be necessary to prevent natural succession by trees.

#### *Plant species of conservation interest*

Species richness was moderately high with 225 species and varieties of vascular plants recorded in the present survey (**Table 1**). Among them, are three locally protected species (*Aquilaria sinensis* (**Figure 6**), *Pavetta hongkongensis*, *Rhododendron simsii* (**Figure 7**)). All three are locally common in Hong Kong, although *Aquilaria sinensis* is threatened by unsustainable and illegal harvesting and is considered globally vulnerable (Sun, 1998). It is also under Class II protection in China.

*Diospyros vaccinioides* is considered globally critically endangered because of its restricted global range and overexploitation (Lu & Pan, 1998), although the species is now known to be fairly widely distributed in South China. Locally in Hong Kong this species is fairly common along streams and in hillside shrubland.

*Entada phaseoloides* (**Figure 8**) is locally very rare in Hong Kong, whereas *Jasminum sinensis*, *Morinda cochinchinensis* (**Figures 9.1 & 9.2**) and *Vitis tsoi* (**Figure 10**) are locally rare. *Sargentodoxa cuneata* (**Figure 11**) was considered to be locally very rare (Corlett *et al.* 2000), but some botanists consider it to be locally rare instead, as it is present in several localities in Sai Kung (NG Sai-chit personal observation). *Toona rubriflora* (**Figure 12**) has a restricted range globally and is recorded only from Fujian and Hong Kong (Xia, 2008). Locally in Hong Kong it has a scattered distribution in lowland forests of central New Territories and Sai Kung (NG Sai-chit personal observation).

A forest area of approximately 1 Ha is present in Hoi Ha (includes feng shui and secondary forest). The coastal vegetation also includes stands of mangrove. The presence of the IUCN listed species, locally rare and very rare species, and species that are globally restricted to South China suggests that the study area is of ecological importance (refer to definitions in TM-EIAO; EPD 2011).

#### *Moths - Lepidoptera*

For a mid-November survey period, this result represents a notably high number of species (**Tables 2 & 3**), especially as the two light traps were operated for only around three hours. Of note were high counts of the predominantly coastal species (in Hong Kong) *Nigilgia anactis* and *Rusicada* sp. nr. *nigritarsis*, normally only seen as singletons, as well as a fresh emergence of *Choreutis fulminea*. The target species *Eristena* sp. near *argentata*, an un-described species known only from three locations, all in Hong Kong, that was recorded in April at the beach site, was not seen, though this species has been reported flying in late October in Tung Chung ([www.hkwildlife.net](http://www.hkwildlife.net)). The higher number of individual moths and species observed at Site 2 compared to Site 1 is expected due to the immediate proximity of the diverse habitat in which the trap was located. The number of moths seen also compares well with respect to other sites recorded within one month of this recording event, indicating that there is probably a relatively diverse and abundant moth fauna still extant at Hoi Ha Wan.



## Recommendations

The results above suggest that the flora community surrounding Hoi Ha Village is of conservation importance. These vegetation types contain plant and moth species of conservation concern. In addition, the marine and aquatic environments such as Hoi Ha Wan Marine Park and the natural streams there also provide habitats for many species of conservation interest. The habitats are fragile and vulnerable to man-made impacts (i.e. sewerage, construction runoff, pesticide). We recommend that no large-scale development should take place at Hoi Ha and any development (small-scale) should be restricted to the existing village area. The vegetation, streams and coastal areas surrounding the village should not be encroached or impacted by further developments due to the existing fragile and vulnerable state of the habitats.

## References

- AFCD. 2011. *Designated Marine Parks and Marine Reserve*. Published on the Internet [http://www.afcd.gov.hk/english/country/cou\\_vis/cou\\_vis\\_mar/cou\\_vis\\_mar\\_des/cou\\_vis\\_mar\\_des\\_hoi.html](http://www.afcd.gov.hk/english/country/cou_vis/cou_vis_mar/cou_vis_mar_des/cou_vis_mar_des_hoi.html) [accessed 26th May 2011]
- Corlett, R.T., Xing, F., Ng, S.-C., Chau, L.K.C., Wong L. M.-Y. 2000. Hong Kong Vascular Plants: Distribution and Status. *Memoirs of the Hong Kong Natural History Society*, 23.
- eFloras. 2011. *Missouri Botanical Garden, St. Louis, MO & Harvard University Herbaria, Cambridge, MA*. Published on the Internet <http://www.efloras.org> [accessed 26th May 2011]
- EPD. 2011. *Technical Memorandum Annex 16 of Environmental Impact Assessment Ordinance*. Government of the Hong Kong Special Administrative Region. Published on the Internet <http://www.epd.gov.hk/eia/english/legis/memorandum/annex16.html> [accessed 26th May 2011]
- Hong Kong Herbarium & South China Botanical Garden (Editors) 2007. *Flora of Hong Kong Vol.1*. Agricultural, Fisheries and Conservation Department, Government of the Hong Kong Special Administrative Region.
- Hong Kong Herbarium & South China Botanical Garden (Editors) 2008. *Flora of Hong Kong Vol.2*. Agricultural, Fisheries and Conservation Department, Government of the Hong Kong Special Administrative Region.
- Hong Kong Herbarium & South China Botanical Garden (Editors) 2009. *Flora of Hong Kong Vol.3*. Agricultural, Fisheries and Conservation Department, Government of the Hong Kong Special Administrative Region.
- Hong Kong Herbarium (editor) 2004. Checklist of Hong Kong Plants. *Agricultural, Fisheries and Conservation Department Bulletin 1 (revised)*. Agricultural, Fisheries and Conservation Department, Government of the Hong Kong Special Administrative Region.
- Lu, S.Y. & Pan, F.J. 1998. *Diospyros vaccinioides*. In: IUCN 2010. *IUCN Red List of Threatened Species*. Version 2010.4. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 26 May 2011.
- Sun, W. 1998. *Aquilaria sinensis*. In: IUCN 2010. *IUCN Red List of Threatened Species*. Version 2010.4. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 26 May 2011.
- Xia N.H. 2008. Meliaceae. In Hong Kong Herbarium & South China Botanical Garden (Editors) 2008. *Flora of Hong Kong Vol.2*: 270.

## Figures



**Figure 1.** Locations of the moth traps for the survey conducted on 13 November 2011



**Figure 2.** Vegetation types identified in the present study: Feng-shui Forest (FSF), Secondary Forest (SF), Shrubland (S), Coastal Vegetation (C), Village Vegetation (V), Freshwater Wetland (W)



**Figure 3.** Interior of the Feng-shui Forest with late-successional epiphytic bird-nest fern, *Neottopteris nidus*





**Figure 4.** Degraded part of the Feng-shui Forest overgrown with climbers and with open canopy



**Figure 5.** Grassy wetland vegetation in Hoi Ha





**Figure 6.** *Aquilaria sinensis* recorded during the present survey



**Figure 7.** *Rhododendron simsii* recorded during the present survey





**Figure 8.** *Entada phaseoloides* recorded during the present survey



**Figures 9.1 (above) & 9.2 (below).** Locally rare *Morinda cochinchinensis* recorded during the present survey





**Figure 10.** Locally rare *Vitis tsoi* recorded during the present survey



**Figure 11.** *Sargentodoxa cuneata* recorded during the present survey



**Figure 12.** *Toona rubriflora*, globally restricted in range, recorded during the present survey



## Tables

**Table 1.** Plant species recorded from Hoi Ha on 28 March 2011

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Acacia confuse</i>						Y		
<i>Acacia mangium</i>		Y						
<i>Acorus tatarinowii</i>				Y				
<i>Adenanthera microsperma</i>	Y		Y			Y		
<i>Adiantum flabellulatum</i>		Y						
<i>Adina pilulifera</i>				Y				
<i>Adinandra millettii</i>	Y	Y						
<i>Aegiceras corniculatum</i>					Y			
<i>Alangium chinense</i>	Y				Y	*Y		
<i>Alchornea trewioides</i>	Y							7209
<i>Alocasia odora</i>	Y							
<i>Alpinia hainanensis</i>	Y							
<i>Ampelopsis cantoniensis</i>	Y							
<i>Antidesma bunius</i>	Y		Y		Y			
<i>Antirhea chinensis</i>		Y						
<i>Aporusa dioica</i>	Y	Y						
<i>Aquilaria sinensis</i>	Y		Y	Y		Y		
<i>Aralia decaisneana</i>			Y					
<i>Archidendron lucidum</i>		Y						
<i>Ardisia crenata</i>	Y							
<i>Ardisia hanceana</i>			Y					
<i>Ardisia quinquegona</i>	Y		Y					
<i>Arundinella nepalensis</i>	Y							
<i>Asparagus cochinchinensis</i>		Y						

**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Averrhoa carambola</i>						Y		
<i>Bambusa sp</i>	Y	Y						
<i>Bauhinia championii</i>			Y		Y			
<i>Bauhinia glauca</i>		Y	Y					
<i>Berchemia floribunda</i>	Y	Y						
<i>Bidens alba</i>						Y		
<i>Blechnum orientale</i>	Y							
<i>Boehmeria nivea</i>		Y				Y		
<i>Bowringia callicarpa</i>			Y					
<i>Breynia fruticosa</i>		Y				Y		
<i>Bridelia tomentosa</i>	Y				Y	Y		
<i>Bryophyllum pinnatum</i>						Y		
<i>Buxus harlandii</i>				Y				
<i>Byttneria aspera</i>	Y	Y	Y					
<i>Caesalpinia crista</i>	Y	Y	Y		Y			
<i>Calamus thysanolepis</i>				Y				
<i>Callicarpa kochiana</i>	Y							
<i>Carallia brachiata</i>	Y							
<i>Carex chinensis</i>		Y				Y		7178
<i>Carex cryptostachys</i>				Y				
<i>Cassia alata</i>						Y		
<i>Celastrus hindsii</i>	Y							
<i>Celastrus monospermus</i>		Y						
<i>Celastrus hindsii</i>		Y						7199



**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Celtis sinensis</i>						Y		
<i>Celtis timorensis</i>	Y							
<i>Cerbera manghas</i>	Y				Y			
<i>Cinnamomum parthenoxylon</i>	Y	Y	Y					
<i>Claoxylon indicum</i>	Y		Y			Y		
<i>Cleistocalyx operculatus</i>	Y			Y		Y		
<i>Clerodendrum inerme</i>					Y			
<i>Clerodendrum japonicum</i>						Y		
<i>Cocculus orbiculatus</i>	Y							
<i>Cratoxylum cochinchinense</i>		Y						
<i>Crinum asiaticum</i> var. <i>sinicum</i>				Y				
<i>Cyclosorus interruptus</i>							Y	
<i>Cyclosorus parasiticus</i>						Y		7208
<i>Dalbergia benthamii</i>	Y		Y		Y	Y		
<i>Daphniphyllum calycinum</i>	Y	Y			Y	Y		
<i>Datura metel</i>						Y		
<i>Dendrotrophe frutescens</i>		Y						
<i>Derris alborubra</i>			Y					
<i>Desmos chinensis</i>	Y	Y				Y		
<i>Dianella ensifolia</i>		Y						
<i>Dicranopteris pedata</i>		Y						
<i>Dimocarpus longan</i>	Y		Y			Y		
<i>Diospyros vaccinioides</i>				Y				

**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Diploclisia glaucescens</i>		Y						
<i>Diplospora dubia</i>		Y						
<i>Dischidia chinensis</i>					Y			
<i>Dryopteris championii</i>		Y						
<i>Ehretia longiflora</i>	Y	Y						
<i>Elaeagnus tutcheri</i>			Y					
<i>Elaeocarpus sylvestris</i>		Y						
<i>Elaeocharis acicularis</i>							Y	
<i>Eleutherococcus trifoliatus</i>	Y					Y		
<i>Embelia laeta</i>								
<i>Embelia ribes</i>		Y	Y					
<i>Entada phaseoloides</i>			Y					7211
<i>Eriocaulon cinereum</i>				Y			Y	
<i>Euonymus nitidus</i>	Y		Y					
<i>Eurya chinensis</i>		Y						
<i>Excoecaria agallocha</i>					Y			
<i>Ficus benjamina</i>					Y			
<i>Ficus formosana</i>	Y							
<i>Ficus hirta</i>		Y						
<i>Ficus hispida</i>	Y					Y		
<i>Ficus pumila</i>	Y	Y	Y			Y		
<i>Ficus pyriformis</i>				Y				
<i>Ficus tinctoria</i>			Y			Y		

**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Ficus variegata</i> var. <i>chlorocarpa</i>	Y	Y				Y		
<i>Ficus vasculosa</i>			Y					
<i>Ficus virens</i> var. <i>sublanceolata</i>					Y			
<i>Fimbristylis</i> sp							Y	7202
<i>Garcinia oblongifolia</i>				Y				
<i>Gardenia jasminoides</i>	Y		Y					
<i>Glochidion eriocarpum</i>		Y						
<i>Glochidion hirsutum</i>	Y						Y	
<i>Glochidion zeylanicum</i>						Y		
<i>Gnetum luofuense</i>		Y		Y				
<i>Gordonia axillaris</i>		Y						
<i>Hypericum japonicum</i>							Y	7205
<i>Gymnanthera oblonga</i>					Y			
<i>Gynura japonica</i>					Y			
<i>Hedyotis hedyotideia</i>	Y	Y	Y					
<i>Heterosmilax japonica</i> var. <i>gaudichaudiana</i>		Y	Y					
<i>Hibiscus tiliaceus</i>					Y	Y		
<i>Homalium cochinchinensis</i>		Y						
<i>Hoya carnosa</i>		Y	Y					
<i>Hydrocotyle sibthorpioides</i>				Y				
<i>Ilex asprella</i>	Y	Y						
<i>Jasminum sinense</i>			Y					7196

**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Juncus effusus</i>							Y	7203
<i>Kandelia obovata</i>					Y			
<i>Lantana camara</i>						Y		
<i>Lindernia sp</i>						Y		
<i>Lindsaea ensifolia</i>	Y	Y						
<i>Lindsaea orbiculata</i>		Y						
<i>Liriope spicata</i>		Y						
<i>Litchi chinensis</i>			Y					
<i>Litsea glutinosa</i>	Y	Y			Y			
<i>Litsea rotundifolia var. oblongifolia</i>		Y						
<i>Lonicera japonica</i>					Y			
<i>Ludwigia adscendens</i>						Y		
<i>Lygodium japonicum</i>		Y						
<i>Lygodium scandens</i>	Y	Y				Y		
<i>Macaranga tanarius</i>	Y					Y		
<i>Machilus pauhoi</i>	Y	Y	Y			Y		
<i>Maclura tricuspidata</i>	Y	Y						7195
<i>Maesa japonica</i>	Y				Y			
<i>Mallotus paniculatus</i>						Y		
<i>Mangifera indica</i>						Y		
<i>Melastoma candidum</i>	Y			Y		Y	Y	
<i>Melastoma sanguineum</i>		Y				Y		
<i>Melicope pteleifolia</i>	Y							

**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Merremia umbellata</i> )	Y		Y					
<i>Microcos paniculata</i>	Y	Y			Y			
<i>Mikania micrantha</i>		Y				Y		
<i>Millettia speciosa</i>		Y						
<i>Miscanthus floridulus</i>		Y						
<i>Morinda cochinchinensis</i>	Y		Y		Y			7200, 7201, 7210
<i>Morinda parvifolia</i>		Y						
<i>Neottopteris nidus</i>			Y					
<i>Ormosia emarginata</i>				Y				
<i>Oxalis corniculata</i>		Y				Y		
<i>Paederia scandens</i>	Y					Y		
<i>Paliurus ramosissimus</i>					Y			
<i>Pandanus austrosinensis</i>	Y		Y					
<i>Pandanus tectorius</i>	Y				Y	Y		
<i>Pavetta hongkongensis</i>	Y	Y	Y					
<i>Pericampylus glaucus</i>	Y							
<i>Philydrum lanuginosum</i>							Y	
<i>Phoenix hanceana</i>	Y	Y						
<i>Phyllanthus emblica</i>	Y	Y						
<i>Phyllanthus reticulatus</i>						Y		
<i>Picrasma quassioides</i>		Y						7179
<i>Piper hancei</i>	Y							
<i>Pittosporum glabratum</i>		Y	Y					

**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Pittosporum glabratum</i> var. <i>neriifolium</i>	Y							
<i>Pogostemon</i> sp		Y						
<i>Pothos chinensis</i>			Y					
<i>Psidium guajava</i>						Y		
<i>Psychotria asiatica</i>	Y	Y						
<i>Pteris dispar</i>		Y	Y					
<i>Pteris ensiformis</i>						Y		
<i>Pueraria lobata</i>		Y						
<i>Pueraria phaseoloides</i>	Y							
<i>Pyrrhosia adnascens</i>					Y			
<i>Rhaphiolepis indica</i>		Y		Y				
<i>Rhapis excelsa</i>					Y			
<i>Rhododendron simsii</i>				Y				
<i>Rhodomyrtus tomentosa</i>		Y						
<i>Rhus succedanea</i>	Y	Y		Y		Y		
<i>Rotala indica</i>				Y			Y	7206
<i>Rourea microphylla</i>		Y	Y	Y				
<i>Rourea minor</i>	Y	Y	Y					
<i>Rubus parvifolius</i>						Y		
<i>Rubus reflexus</i>		Y						
<i>Sabia limoniacea</i>			Y					
<i>Sageretia thea</i>	Y	Y				Y		
<i>Sapium discolor</i>		Y						

**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Feng-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Sapium sebiferum</i>						Y		
<i>Sarcosperma laurinum</i>	Y		Y			Y		
<i>Sargentodoxa cuneata</i>			Y					
<i>Schefflera heptaphylla</i>	Y	Y	Y					
<i>Schima superba</i>	Y		Y					
<i>Severinia buxifolia</i>					Y			
<i>Smilax corbularia</i>		Y		Y				
<i>Smilax glabra</i>		Y						
<i>Smithia conferta</i>							Y	
<i>Spilanthes paniculata</i>						Y		
<i>Stauntonia chinensis</i>			Y					
<i>Stephania longa</i>	Y							
<i>Sterculia lanceolata</i>	Y	Y	Y		Y	Y		
<i>Strophanthus divaricatus</i>			Y					
<i>Strychnos umbellata</i>					Y			
<i>Syzygium hancei</i>	Y	Y		Y	Y			
<i>Symplocos cochinchinensis</i> var. <i>laurina</i>	Y				Y	Y		
<i>Syzygium jambos</i>	Y							
<i>Syzygium levinei</i>	Y					Y		
<i>Tetracera asiatica</i>	Y	Y						
<i>Tetrastigma planicaule</i>	Y		Y					
<i>Thunbergia grandiflora</i>			Y			Y		
<i>Toddalia asiatica</i>	Y							



**Table 1.** (Continued from previous page)

Species name	Secondary forest	Shrubland	Fung-shui forest	Streamside	Coastal	Village	Wetland	SCNG Voucher no.
<i>Toona rubriflora</i>			Y					
<i>Toxicarpus wightianus</i>			Y					
<i>Tylophora ovata</i>	Y		Y					
<i>Urceola rosea</i>	Y	Y						
<i>Urena procumbens</i>					Y			
<i>Utricularia aurea</i>							Y	
<i>Uvaria macrophylla</i>		Y	Y					
<i>Viburnum odoratissimum</i>	Y	Y				Y		
<i>Vitex quinata</i>	Y							
<i>Vitis tsoii</i>		Y						
<i>Wikstroemia indica</i>		Y						
<i>Wollastonia biflora</i>		Y			Y			
<i>Xylosma racemorum</i>		Y						
<i>Zanthoxylum avicennae</i>		Y		Y				
<i>Zanthoxylum nitidum</i>	Y		Y		Y			
<i>Zanthoxylum scandens</i>		Y						

**Table 2.** Moth (Lepidoptera) species recored during the survey conducted on 13 November 2011

Taxonomic listing of records								
Family	Subfamily	Species name	HK Status & Distribution	Site Code		Total Count	KFBG status	Other Notes
				Site 1	Site 2			
BRACHODIDAE	Phycodinae	<i>Nigilgia anactis</i>	s, w		6	6	absent	highest ever count of this coastal species in Hong Kong
CHOREUTIDAE	Choreutinae	<i>Choreutis fulminea</i>	s, l		6	6	absent	
		<i>Choreutis</i> sp. C nr. <i>achyroides</i>	r, l		1	1	absent	
CRAMBIDAE	Crambinae	<i>Culladia hastiferalis</i>	c, w	1	1	2	common	
		Odontiinae	<i>Syntonarcha iriastis</i>	c, w	2	1	3	common
	Spilomelinae	<i>Cotachena histricalis</i>	u, w		1	1	uncommon	
		<i>Eurrhyarodes bracteolalis</i>	f, w		1	1	common	
		<i>Filodes fulvidorsalis</i>	c, w	1		1	common	
		<i>Glyphodes bivitalis</i>	c, w		1	1	frequent	
		<i>Haritalodes derogata</i>	c, w		2	2	uncommon	
		<i>Herpetogramma</i> sp. B	u, w		1	1	scarce	
		<i>Hymenia perspectalis</i>	u, w	1		1	uncommon	
		<i>Lamprosema tampusalis</i>	c, w	1	1	2	common	
		<i>Omiodes indicata</i>	u, l	1		1	uncommon	
<i>Symmoracma minoralis</i>	u, l		1	1	frequent			
DREPANIDAE	Drepaninae	<i>Strepsigonia diluta</i>	f, l		1	1	common	
EREBIDAE	Arctiinae	<i>Brunia antica</i>	vc, w	1	1	2	very common	
		<i>Cretonotos transiens</i>	c, w		1	1	very common	
		<i>Cyana fasciola</i>	c, w		1	1	common	
		<i>Eilema fuscodorsalis</i>	c, w	1		1	very common	
		<i>Lyclene acteola</i>	u, l	1		1	uncommon	
		<i>Lyclene alikangiae</i>	c, w		1	1	very common	
		<i>Microlithosia shaowuica</i>	f, l		1	1	common	
	Aventiinae	<i>Cerynea punctilinealis</i>	c, w	1	1	2	frequent	
	Calpinae	<i>Calyptra minuticornis</i>	f, w		1	1	uncommon	
	Erebinae	<i>Bastilla fulvotaenia</i>	c, w	1	1	2	uncommon	
		<i>Ericcia subcinerea</i>	vc, w	1		1	very common	
		<i>Macaldenia palumba</i>	c, w		1	1	common	
		<i>Ophisma gravata</i>	u, w	1		1	scarce	

**Table 2.** (Continued from previous page)

Taxonomic listing of records								
Family	Subfamily	Species name	HK Status & Distribution	Site Code		Total Count	KFBG status	Other Notes
				Site 1	Site 2			
	Herminiinae	<i>Hadennia jutalis</i>	c, w		1	1	frequent	
		Herminiinae genus & sp. A	s, l		2	2	absent	unplaced to genus, possibly undescribed
		<i>Hydrillodes abavalis</i>	c, w	2	2	4	common	
		<i>Nodaria externalis</i>	c, w		1	1	very common	
		<i>Polypogon biasalis</i>	f, w	1	5	6	uncommon	
	Hypeninae	<i>Hypena subvittalis</i>	r, l		1	1	rare (fern walk)	<b>4th confirmed HK site;</b> previously known from KFBG, a coastal site near Cheung Shan, Sai Kung CP and Long Valley.
	Lymantriinae	<i>Euproctis</i> sp. G	r, rd	1		1	1 record	
	miscellaneous L.A.Q.	<i>Anisoneura salebrosa</i>	c, w		1	1	common	
		<i>Ercheia cyllaria</i>	c, w		5	5	very common	
		<i>Erygia apicalis</i>	c, w		1	1	common	
		<i>Lophathrum comprimens</i>	c, w	1	1	2	common	
		<i>Saroba pustulifera</i>	c, w		1	1	frequent	
		<i>Throana pectinifer</i>	f, w		1	1	uncommon	
	Pangraptinae	<i>Pangrapta plumbilineata</i>	c, w		1	1	common	
	Rivulinae	<i>Rivula striatura</i>	f, l	3	1	4	uncommon	
	Scoliopteryginae	<i>Cosmophila flava</i>	c, w		1	1	common	
		<i>Rusicada</i> sp. c.f. <i>nigritarsis</i>	r, rd	3	3	6	absent	<b>3rd confirmed HK site;</b> previously known from Lam Tsuen Valley and a coastal site near Cheung Shan, Sai Kung CP.
GEOMETRIDAE	Ennominae	<i>Celeana festiviaria</i>	c, w	1		1	common	
		<i>Serratophyga xanthospilaria</i>	c, w		1	1	frequent	
		<i>Zanclopera falcata</i>	c, w	1	1	2	common	
	Geometrinae	<i>Eucyclodes semialba</i>	f, w		1	1	uncommon	
		<i>Lophophelma calaurops</i>	vc, w	1		1	very common	
		<i>Lophophelma funebrosa</i>	c, w		2	2	common	
		<i>Lophophelma luteipes</i>	c, w		3	3	common	

**Table 2.** (Continued from previous page)

Taxonomic listing of records			HK Status & Distribution	Site Code		Total Count	KFBG status	Other Notes
Family	Subfamily	Species name		Site 1	Site 2			
	Larentiinae	<i>Asthenes undulata</i>	u, w	1	2	3	rare (Misha's & summit of Kwun Yum Shan)	
		<i>Sigilliclystis kendricki</i>	endemic; c, w		1	1	common	a common and widespread species, but <b>currently only known from Hong Kong; meets IUCN Red List criteria for Near Threatened status</b>
	Sterrhinae	<i>Idea purpurea</i>	c, w		1	1	common	
		<i>Pylargosceles steganioides</i>	c, w	1		1	uncommon	
LASIOCAMPIDAE	Lasiocampinae	<i>Euthrix isocyma</i>	vc, w		1	1	frequent	
LIMACODIDAE	unplaced to subfamily (Limacodidae)	<i>Phlossa conjuncta</i>	f, w		1	1	uncommon	
NOCTUIDAE	Bagisarinae	<i>Chasmina candida</i>	u, l	1	1	2	absent	mangrove associated species
	Condicinae	<i>Condica conducta</i>	c, w	1		1	very common	
	Heliothinae	<i>Helicoverpa armigera</i>	f, w		1	1	common	
	Noctuinae	<i>Athetis hongkongensis</i>	endemic; c, w		1	1	common	a common and widespread species, but <b>currently only known from Hong Kong; meets IUCN Red List criteria for Near Threatened status</b>
		<i>Athetis stellata</i>	c, w	3	3	6	common	
		<i>Athetis stellulata</i>	c, w	1		1	frequent	
		<i>Mythimna yu</i>	c, w		1	1	common	
		<i>Spodoptera mauritia</i>	c, w		1	1	frequent	
	Plusiinae	<i>Ctenoplusia agnata</i>	f, w	1		1	uncommon	
NOLIDAE	Nolinae	<i>Etanna breviscula</i>	f, l	2		2	frequent	
		<i>Nola marginata</i>	f, w		1	1	frequent	
NOTODONTIDAE	Pygaerinae	<i>Micromelalopha baibarana</i>	c, w		1	1	frequent	
OECOPHORIDAE	Oecophorinae	<i>Promalactis semantris</i>	s, w	1		1	uncommon	
PLUTELLIDAE	Plutellinae	<i>Plutella xylostella</i>	c, w		1	1	common	

**Table 2.** (Continued from previous page)

Taxonomic listing of records			HK Status & Distribution	Site Code		Total Count	KFBG status	Other Notes
Family	Subfamily	Species name		Site 1	Site 2			
PYRALIDAE	Pyralinae	<i>Arctiolepis rubida</i>	f, w	1		1	rare (Butterfly Gdn & Misha's)	
SPHINGIDAE	Macroglossinae	<i>Macroglossum fritzei</i>	vc, w	1	3	4	common	
TORTRICIDAE	Olethreutinae	<i>Spilonota mortuana</i>	f, w	1	1	2	uncommon	
ZYGAENIDAE	Chalcosiinae	<i>Eterusia aedea</i>	c, w		2	2	frequent	
<b>Abundance (number of individual moths) Total</b>				<b>43</b>	<b>92</b>	<b>135</b>		
<b>Species Richness (number of moth species) Total</b>				<b>34</b>	<b>60</b>	<b>77</b>		

Species and morphospecies names are as applied in the moth collection at KFBG and on the Hong Kong Moth Recorder Database maintained by C&R Wildlife	
Distribution is based on mercury vapour light trap data from 1993 to 2011. Status based on all data on HK Moth Recorder Database (almost 65,000 records as of 30 Nov 2011)	
<b>Distribution classes:</b> rd - restricted to three or fewer sites in HK l - local, found in up to three regions in HK (from (1) NENT; (2) NWNT; (3) Lantau & s.w. outlying islands; (4) Central NT; (5) Sai Kung, Clear Water Bay & eastern outlying islands; (6) Kowloon; (7) HK Island & southern outlying islands) w - widespread in HK (found in at least four of the above regions in HK)	<b>Status classes:</b> vr - very rare (1 or 2 records) r - rare (3 to 7 records) s - scarce (8 to 15 records) u - uncommon (16 to 31 records) f - frequent (32 to 63 records) c - common (64 to 255 records) vc - very common (> 255 records) endemic - species not recorded outside HK dd - data deficient due to species identification problems

**Table 3.** Moth species richness for each survey site

HK Distribution	HK Status	shared	Site 1	Site 2	total
restricted	rare	1	2	1	2
local	rare	0	0	2	2
	scarce	0	0	2	2
	uncommon	1	3	2	4
	frequent	1	2	3	4
widespread	scarce	0	1	1	2
	uncommon	1	3	3	5
	frequent	2	4	9	11
	common	9	15	32	38
	HK Endemic, common	0	0	2	2
	very common	2	4	3	5
total species richness		17	34	60	77

## About KFBG

Kadoorie Farm and Botanic Garden (KFBG) is situated in the rural New Territories, on the northern slopes of Tai Mo Shan, Hong Kong's highest mountain. Two steep spurs enclose its deep-set valley. Within KFBG are streams, woodlands, orchards, vegetable gardens, walking trails, live animal exhibits, floral exhibits, sustainable agriculture demonstration plots, art exhibits, a wild animal rescue centre, a native tree nursery, and, other conservation and education facilities.

In the post-war years, Hong Kong was flooded with destitute refugees. Many had traditional knowledge of crop production and livestock farming but no stock, others had land but no experience. They required support to rebuild their lives. The farm site at Pak Ngau Shek was established in 1956 as a base for livestock breeding and distribution, agricultural research, farmers training, public education and recreation. The barren slopes were terraced and planted with orchards and vegetable gardens. The development of the botanic garden began in 1963 and the plant conservation programme from 1972.

On 20th January, 1995, the Legislative Council of Hong Kong passed an Ordinance (Chapter 1156) incorporating KFBG as a non-profit corporation designated as a conservation and education centre. It is a unique public-private partnership, for while the KFBG Corporation is a public organisation, it is privately funded by the Kadoorie Foundation.

Since 1995, KFBG has been conducting a wide range of nature education, nature conservation and sustainable living programmes both on-site, and, throughout Hong Kong and South China.

In this time of severe global crisis KFBG raises awareness, undertakes rigorous science-based species conservation and ecosystem restoration, and offers new ways of thinking and living to respond to the world's problems. Hence, our work brings hope and improvement by focusing on nature conservation, sustainable living and holistic education that re-connects people with nature. By working together with the public, Governments, academia, NGOs and businesses, we can protect our common future.

Our mission is to harmonise our relationship with the environment. Our vision is a world in which people live sustainably with respect for each other and nature.

