

Hong Kong overlooked diversity

被忽略的香港生物多樣性

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IBBL Insect Biodiversity &
Biogeography Lab

SCHOOL OF BIOLOGICAL SCIENCES • THE UNIVERSITY OF HONG KONG

Young scientists describing new species

描述新物種的年輕科學家



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Unknown biodiversity

未知的生物多樣性

Estimate of 80% of global biodiversity unknown – particularly in tropical regions

估計全球有80%的生物多樣性均屬未知 - 特別是在熱帶地區 (Stork *et al.* 2016, Barlow *et al.* 2018)

A majority of known (56%) and unknown diversity is composed of insects

昆蟲佔其中的56%

Importance of protecting biodiversity but limited efficiency if 4/5 species are unknown.

每5種物種就有4種是未知的，保護生物多樣性的效率成疑。



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Paratopula bauhinia

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Undescribed species: an organism unknown to Science which does not have a name. Since 2010, at least 103 species described from Hong Kong (74% insects)

未被描述的物種： 未被科學界發現及命名的生物。
至2010年，在本港描述的物種有103種（昆蟲佔74%）

Unrecorded species: a species already named but for which distribution is novel in a given region

未記錄的物種： 已命名的物種，但在本港未有分佈記錄

Vast numbers of insect species in Hong Kong remain unrecorded or undescribed

大量本港的物種仍未被記錄或描述





The *Strumigenys* ant genus as example

以瘤顎蟻屬為例

Strumigenys are small ants (1.5 to 4mm) living in the leaf litter / soil

瘤顎蟻屬的螞蟻生活在落葉/土壤中，體型細小（1.5至4毫米）



Known as mini-trap jaw ants and predators of small arthropods

被稱為“迷你陷阱顎螞蟻”，是小型節肢動物的捕獵者



Prior to our study, 12 species had been recorded in HK

We double this number with 24 species now confirmed

在我們研究前，在香港錄得12種

我們將原有記錄增加了一倍，現已確認共錄得24種

NAME An ANT

螞蟻命名計劃

Support Biodiversity Discoveries!

支持生物多樣性研究工作！

**Partnership between scientists and biodiversity
benefactors**

伙伴關係：科學家 與 生物多樣性資助者

**In exchange of funding support for research, you
will choose the name for a species**
資助研究，物種由你命名

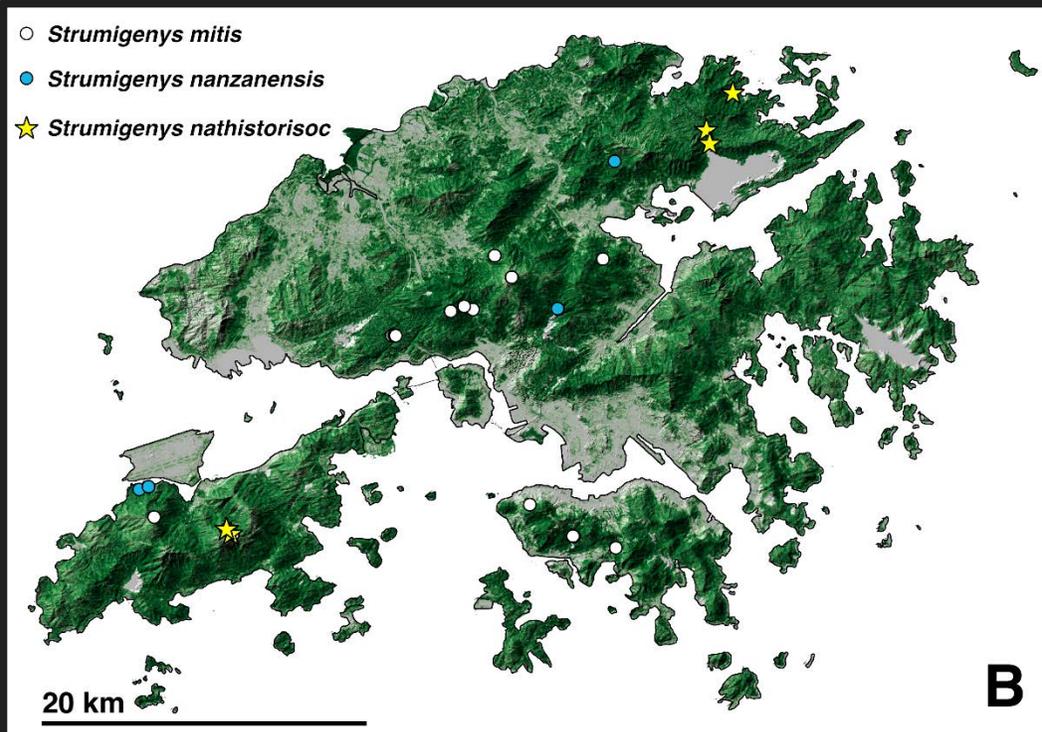
<https://benoitguenard.wordpress.com/name-an-ant/>



Strumigenys nathistorisoc

Named after *The Hong Kong Natural History Society*, the first benefactors of the *Name An Ant Program*

以香港自然歷史學會命名，是螞蟻命名計劃的首個資助機構



Known from two regions of HK
在本港兩個地區錄得

www.hknhs.org/



全長TL: 3.1mm

Strumigenys lantau

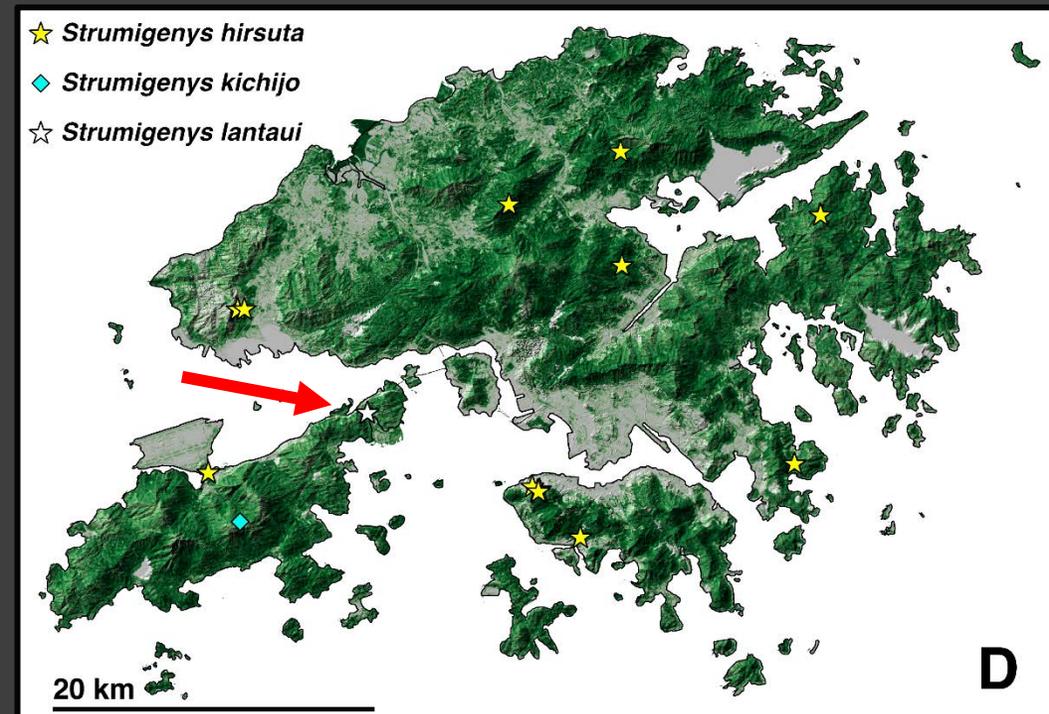
Known from only 3 specimens collected on
Lantau Island – very rare species

僅於大嶼山收集過3個樣本 - 非常稀有的螞蟻



全長TL: 1.6mm

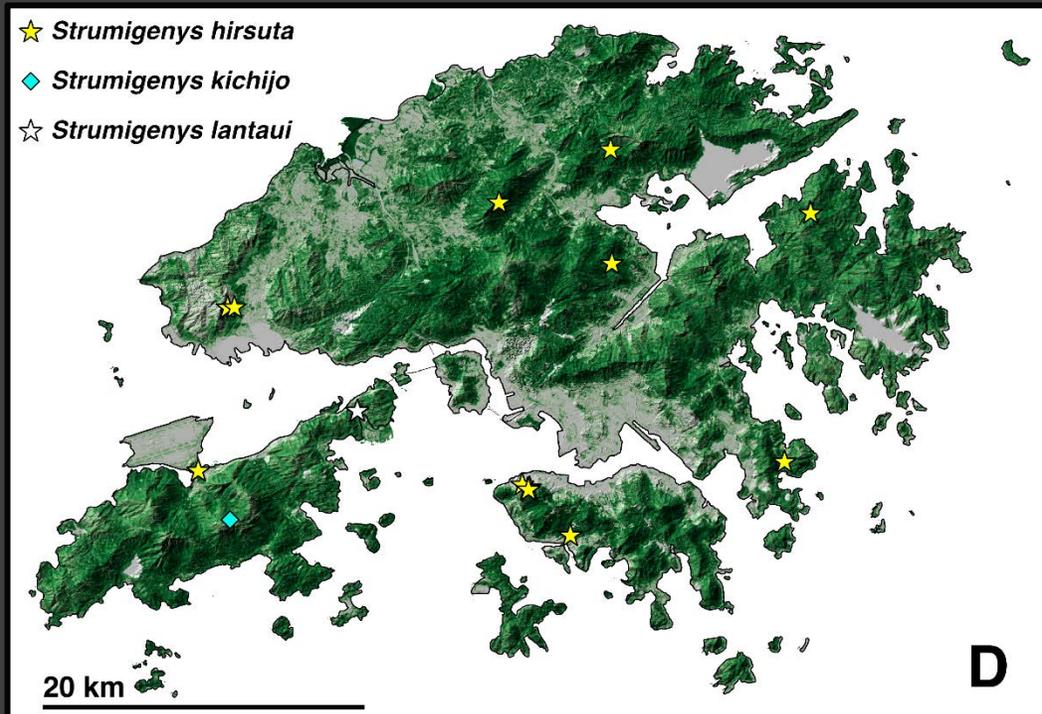
Named after
Lantau Island
以大嶼山命名



Strumigenys hirsuta

Widespread in Hong Kong

本港均有分佈



Named after its
hairy appearance
以其毛茸茸的外觀命名



10 newly recorded species in HK 香港的10個新記錄



S. formosa



S. kichijo



S. mutica



S. sydorata



S. tisiphone

2nd record 記錄!

5 native species 原生物種



S. hexamera



S. nepalensis



S. membranifera



S. rogeri



B. patagonicus

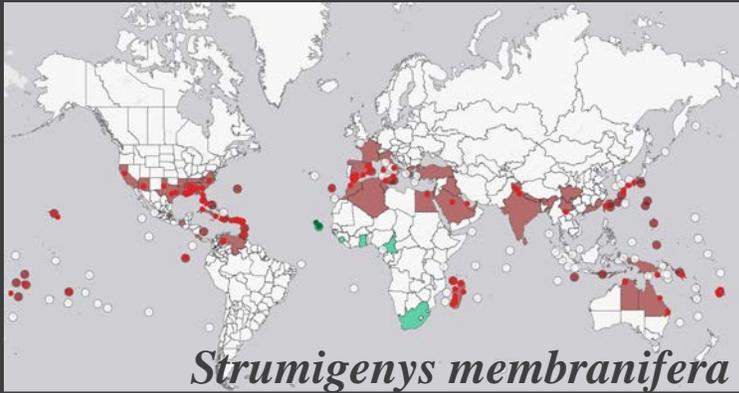
5 exotic species 外來物種

Different impacts from exotic species

外來物種帶來的不同影響

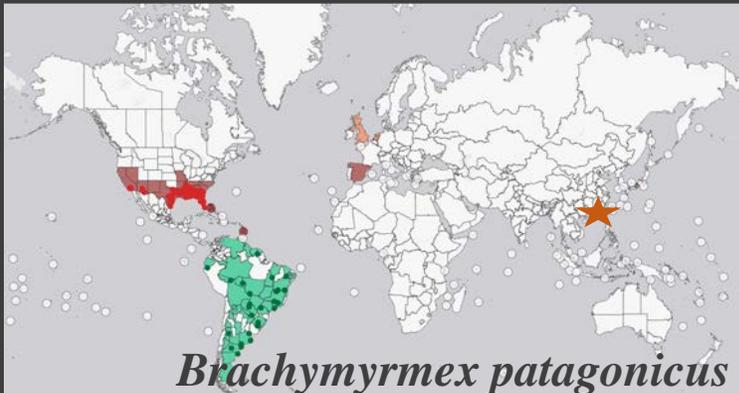
Exotic with no evidence of impacts

沒有負面影響證據



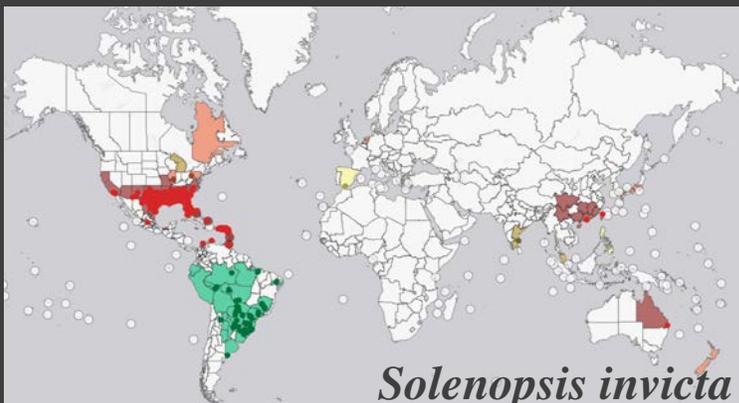
Exotic species with economic impacts - Urban pest

具有經濟影響的外來物種 - 市區害蟲



Exotic species with impacts on local species / ecosystems or human health

對當地物種 / 生態系統 或 人類健康 產生影響的外來物種





First record of *Brachymyrmex* in continental Asia

短蟻屬在亞洲大陸的第一個記錄



Small (2mm), considered as a major urban pest
體型細小（2毫米），被認定為一種主要的市區害蟲

Found in Hung Hom district in November 2018 –
probably at an early invasion stage in HK
2018年11月在紅磡發現 – 有機會正處於早期的人侵階段



In the USA (invaded range), known to invade
households, hotels, hospitals, schools...

在美國（入侵範圍），已知會入侵民居，酒店，醫院，學校.....

Biological invasions in HK

香港的生物入侵

Actions required to survey and control the spread of *Brachymyrmex patagonicus*

所需的行動：調查和控制 *Brachymyrmex patagonicus* 的傳播

The addition of 5 new exotic species confirms the position of Hong Kong as a biological invasions hotspot

新增加的5種外來物種，證實了香港是生物入侵的熱點

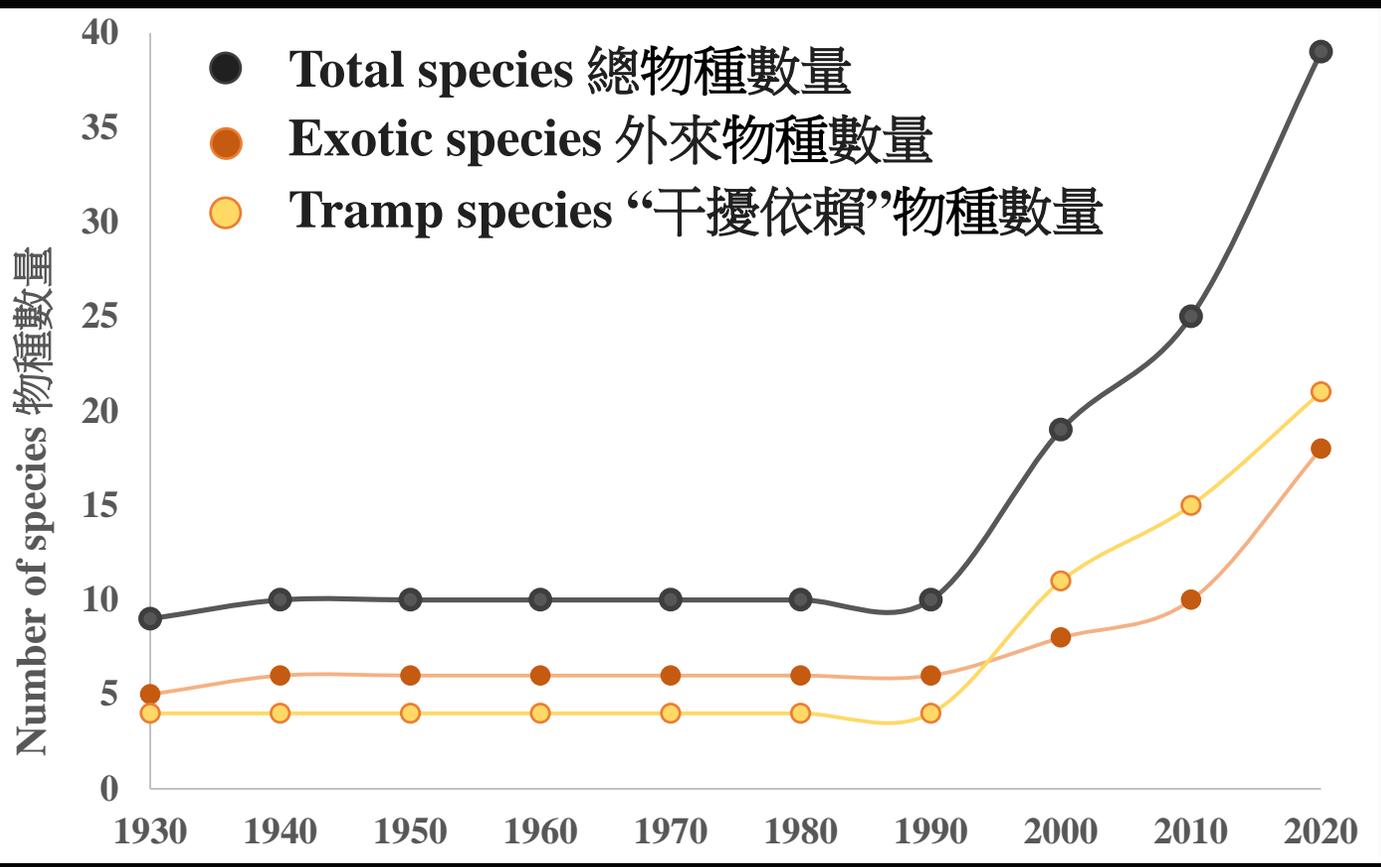
Urgent need for the implementation of monitoring programmes

就實施監測計劃，有迫切需要



Increase of ant invasions in HK

本港入侵螞蟻的上升趨勢



In recent years, sharp increases in accumulation of exotic ant species found in HK

近年，本港發現的外來螞蟻物種急劇增加

Detection over time of exotic ants in Hong Kong

香港外來螞蟻物種數量的累積走勢

Key messages 重要信息

Many species of ants (and other insects) are unrecorded and undescribed in Hong Kong
許多香港的螞蟻物種（和其他昆蟲）都未被描述及記錄

Novel actions needed to discover this overlooked but important part of biodiversity; e.g. public support, development of facilities (biodiversity museum)
我們需要有新的行動去發現被忽視但重要的生物多樣性。例如：大眾的支持、設施的建造（生物多樣性博物館）



Key messages 重要信息

The number of new exotic species detected is worrisome, highlighting the regional importance of Hong Kong in importing & exporting new species
新檢測到的外來物種數量令人擔憂，突顯了香港對區內外來物種傳播(傳入和傳出)擔當著重要角色

Implementing detection programs and control measures should be perceived as a priority
實施檢測程序和控制措施應視為優先工作



References 參考文獻

Publications

Guénard B. 2019. First record of the emerging global pest *Brachymyrmex patagonicus* Mayr 1868 (Hymenoptera: Formicidae) from continental Asia. *Asian Myrmecology* 10: e010012

Tang KL, MP Pierce, & B Guénard. A revision of the *Strumigenys* genus (Hymenoptera, Formicidae, Myrmicinae) for Hong Kong with the description of three new species and the addition of six native and three exotic species records. *Zookeys* 831, 1-48.

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Questions 提問?





Strumigenys lantauai



Strumigenys hirsuta



Strumigenys nathistorisoc



Brachymyrmex
patagonicus



*Strumigenys
nathistorisoc*



Strumigenys
lantauui

Strumigenys lantau



TL: 1.6mm

Strumigenys nathistorisoc



TL: 3.2mm



Strumigenys hirsuta

TL: 3.1mm

**3 newly described species from
Hong Kong**



A) Strumigenys hexamera

B) Strumigenys membranifera

C) Strumigenys nepalensis

D) Strumigenys rogeri

E) Brachymyrmex patagonicus

