

生物策略表

類別	生物策略 (Strategy)
生物策略 STRATEGY	花朵選擇性吸引傳粉者 (Flowers selectively attract pollinators)
生物系統 LIVING SYSTEM	井上氏蘭花蕉 <i>Orchidantha inouei</i>
功能類別 FUNCTIONS	#獲得、吸收、或過濾生物 #傳遞化學訊號 (氣味、味道等) #Capture, absorb, or filter organisms #Send chemical signals (odor, taste, etc.)
作用機制標題	蘭花蕉的花朵透過模仿糞便的氣味，吸引糞金龜傳粉者 (The flowers of some orchid-flower plants attract dung beetle pollinators by imitating the scent of dung.)
生物系統/作用機制 示意圖	<p>Source: https://doi.org/10.2307/2656954</p>
作用機制摘要說明 (SUMMARY OF FUNCTIONING MECHANISMS)	
文獻引用 (REFERENCES)	
<p>「蘭花蕉科 (Lowiaceae) 是薑目 (Zingiberales) 中的一個科，在單一屬的蘭花蕉屬 (<i>Orchidantha</i>) 中包含了 11 個物種。在這我們首次報導蘭花蕉的傳粉，描述一個由婆羅洲沙勞越 (Sarawak, Borneo) 糞金龜 (dung-beetle) 授粉的新系統。井上氏蘭花蕉 (<i>Orchidantha inouei</i>) 會在地面上開出兩側對稱 (zygomorphic) 的花朵。觀察顯示金龜子科 (scarabaeid)，主要是喙蜋螂屬 (<i>Onthophagus</i>) 的糞金龜物種，會經常拜訪這種蘭花蕉並為其花朵傳粉。在井上氏蘭花蕉上採集到的四個喙蜋螂屬糞金龜，同樣會被以糞便或腐肉為誘餌的陷阱捕捉到。推測這些糞金龜會被花朵類似糞便的氣味所吸引。井上氏蘭花蕉的傳粉與其它甲蟲傳粉的例子有所不同，它的花朵並不會提供任何獎勵或是庇護所。糞金龜很</p>	

擅長追蹤特定的糞便氣味。蘭花蕉屬是這類植物中唯一缺乏花蜜種類。在這種薑目中發現利用欺騙糞金龜的傳粉行為 (pollination deception) 十分有趣，因為其他已知植物都需付出花蜜花粉等獎賞代價，以吸引與其互惠互利的傳粉者拜訪，例如蜜蜂、鳥類及蝙蝠。」(Sakai & Inoue 1999: 56)

“Lowiaceae, a family of the Zingiberales, comprise 11 species in the single genus *Orchidantha*. Here we present the first report on the pollination of Lowiaceae and describe a new system of dung-beetle pollination from Sarawak, Borneo. *Orchidantha inouei* has a zygomorphic flower located just above the ground. Observations revealed that the plant is visited frequently and is pollinated by scarabaeid dung beetles, mainly members of the genus *Onthophagus*. All four species of *Onthophagus* collected on *O. inouei* have also been caught using traps baited with dung or carrion in Borneo. *Onthophagus* was presumably attracted to the dung-like odor of the flower. Pollination of *O. inouei* is different from other examples of beetle pollination in that its flower provides neither reward nor protected space. Dung beetles are excellent at following a particular dung scent. *Orchidantha* is the only genus that includes species lacking floral nectar. It is interesting that this deception pollination using dung beetles was found in Zingiberales, in which all known species have mutual and specialized relationships with their long-distance, but costly, pollinators—bees, birds, and bats.” (Sakai & Inoue 1999: 56)

參考文獻清單與連結 (REFERENCE LIST)

Sakai, S., T. Inoue. (1999). A new pollination system: dung-beetle pollination discovered in *Orchidantha inouei* (Lowiaceae, Zingiberales) in Sarawak, Malaysia. *American Journal of Botany* 86: 56-61. (<https://doi.org/10.2307/2656954>)

延伸閱讀

生物系統延伸資訊連結 (LEARN MORE ABOUT THE LIVING SYSTEM/S)

https://en.wikipedia.org/wiki/orchidantha_inouei

https://www.onezoom.org/life/@orchidantha_inouei

<https://eol.org/pages/229360>

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