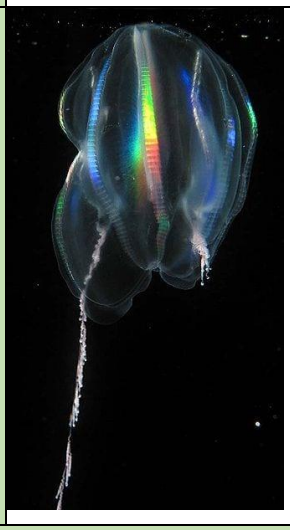
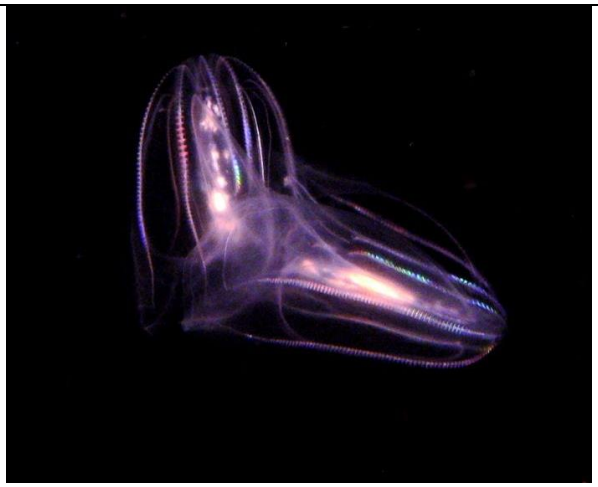
生物策略表

類別	生物策略 (Strategy)
生物策略 STRATEGY	纖毛擺動創造虹彩（Moving Cilia Create Iridescence）
生物系統 LIVING SYSTEM	櫛水母（comb-jellyfishes）
功能類別 FUNCTIONS	#散射　#Scattering
作用機制標題	移動的纖毛產生虹彩 （Moving Cilia Create Iridescence）
生物系統/作用機制示意圖 (確認版權、註明出處；畫質)	 
作用機制摘要說明 (SUMMARY OF FUNCTIONING MECHANISMS)	

櫛水母，Ctenophores, comb-jellies 或 comb-jellyfishes，是櫛水母門海洋動物的常用名稱。他們可變形身體，包括肌肉，全都是透明的。它們組織的折射率 (refractive index) 與它們所生活的鹽水的折射率幾乎完全匹配，因此它們很難被感知，除非在強烈的光照下，它們外膜的不規則性產生一些微弱的光散射時才能被看見。 *Beroë cucumis* 具有長橢圓體的形狀（像黃瓜的形狀），在游泳的方向上有一個嘴孔 (mouth aperture)。八排運動纖毛沿著動物的身體延伸，這些器官通常比身體表面的其他部分更容易看到，因為這些突起上發生了更強的光散射。此外，櫛板 ("comb"-rows) 看起來顏色鮮豔，呈現出彩虹色，隨著櫛板的運動而在整個可見光譜中形成彩虹。正如本文的其餘部分將闡明的那樣，這與任何生物發光無關，但可以理解為二維光子晶體 (photonic-crystal) 的選擇性反射。 （韋爾奇等人 2006:041916-1）

Ctenophores, comb-jellies or comb-jellyfishes, are common names for marine animals of the phylum Ctenophora. All parts of their deformable body, including muscles, are transparent. The refractive index of their tissues matches nearly exactly that of the salted water in which they live, consequently they are difficult to perceive, except under intense illumination, when the irregularities of their outer membrane produce some faint light scattering. The species *Beroë cucumis* has the form of oblong ellipsoids (a "cucumber" shape) with a mouth aperture in the forward swimming direction. Eight rows of locomotory cilia run along the body of the animal…These organs are usually much more easily visible than the rest of the body surface, due to the stronger light scattering which takes place on these protrusions. Moreover, the "comb"-rows appear to be brightly colored, showing an iridescence that rainbows across the whole visible spectrum as the combs beat for locomotion. As the rest of the paper will make clear, this is not related to any bioluminescence but can be understood as selective reflection from a two-dimensional photonic-crystal. (Welch et al. 2006:041916-1)

文獻引用 (REFERENCES)

JOURNAL ARTICLE

Welch V; Vigneron JP; Lousse V; Parker A

參考文獻清單與連結 (REFERENCE LIST) **Harvard 或 APA 格式**

延伸閱讀: Harvard 或 APA 格式（取自 AskNature 原文；若為翻譯者補充，請註明）

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

撰寫/翻譯/編修者與日期

施芳程翻譯(2022/4/5)；許秋容編修 (2022/5/15)

AskNature 原文連結

https://asknature.org/strategy/moving-cilia-create-iridescence/