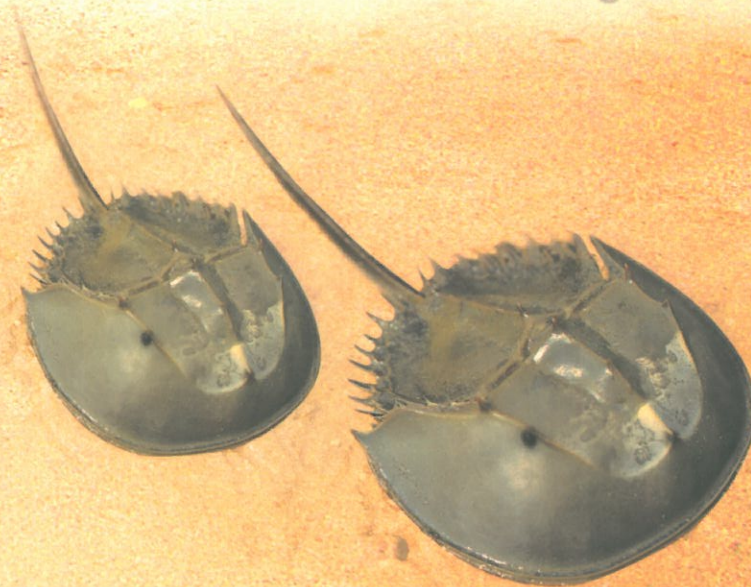


香港的馬蹄蟹

Horseshoe crabs in Hong Kong



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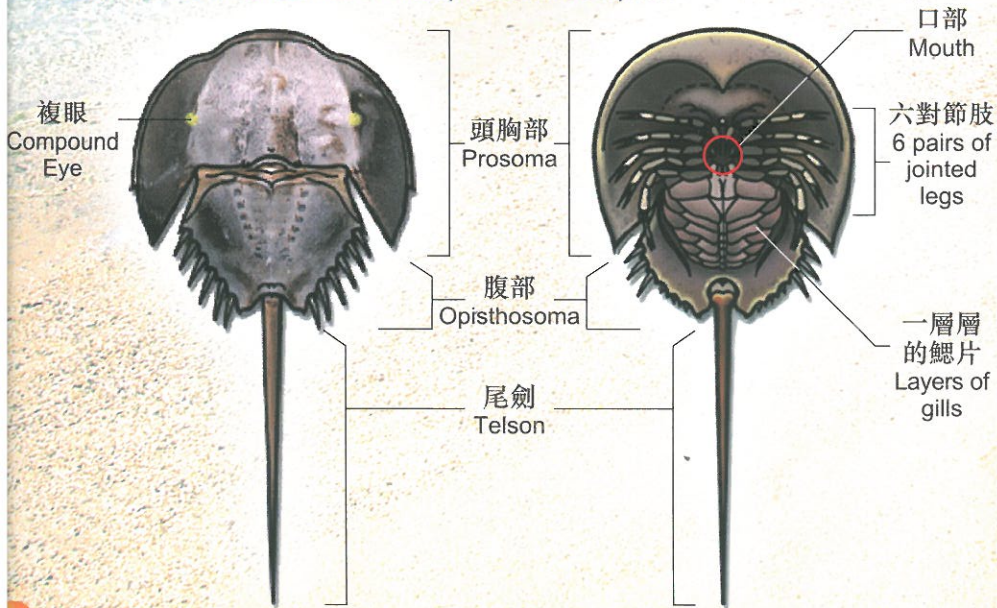


漁農自然護理署
Agriculture, Fisheries and Conservation Department

簡介 Introduction

“馬蹄蟹”是蟹的俗稱，這個俗稱對於這動物來說，祇說對了一半。雖然牠的頭胸部看起來確實像隻馬蹄，但牠並不是蟹。事實上，馬蹄蟹是蜘蛛和蝎子的親屬。

The name “horseshoe crab” is just partially correct in description. The upper body of the animal looks like a horseshoe, but it is not a true crab. The horseshoe crab is a relative of the spider and scorpion.



馬蹄蟹出現在地球上已超過3億年，起源比恐龍還要早。牠們的基本體形在過去數百萬年一直沒有改變，因而有“活化石”之稱。

Horseshoe crabs have been on earth for over 300 million years, long before the dinosaurs appeared. Their basic body form remains almost unchanged in the past millions of years. Therefore they are often called “living fossils”.



Collection from the Lapworth Museum, University of Birmingham, England and photo by Dr Lyall I. Anderson (National Museums of Scotland, Edinburgh)



“古代”和“現今”的馬蹄蟹
An “ancient” and a “modern” horseshoe crab

分佈 Distribution

我們可以在東南亞找到三個馬蹄蟹的品種（中國蟹、南方蟹和圓尾蟹）。第四個品種（美國蟹）則在大西洋沿岸可見。

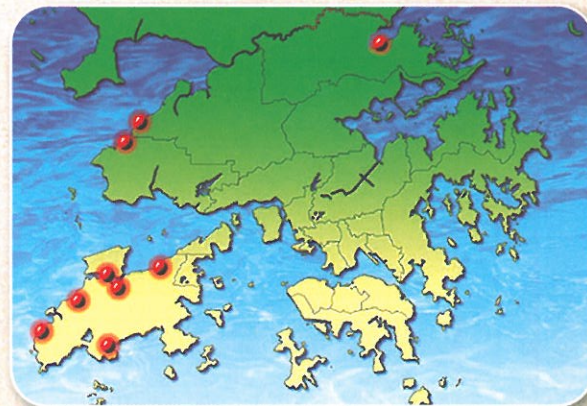
In South East Asia, you can find three species of horseshoe crabs (*Tachypleus gigas*, *T. tridentatus* and *Carcinoscorpius rotundicauda*). The fourth species (*Limulus polyphemus*) is found along the Atlantic Coast of America.



馬蹄蟹的分佈
Global distribution of horseshoe crabs

在香港，我們可以在后海灣、大嶼山和沙頭角海的一些沙灘或泥灘上找到中國蟹和圓尾蟹的幼體。成年的馬蹄蟹在本地近岸及離岸的水域出沒，偶然在西貢、南丫島和大嶼山等水域被拖網船捕獲。

In Hong Kong, juveniles of *T. tridentatus* and *C. rotundicauda* are commonly found on some sandy beaches or mudflats in Deep Bay, Lantau Island and Starling Inlet. Adult horseshoe crabs occur in shallow to deep local waters. Occasionally, they are sometimes by-catch of trawlers fishing in waters off Sa Kung, Lamma Island and Lantau Island.

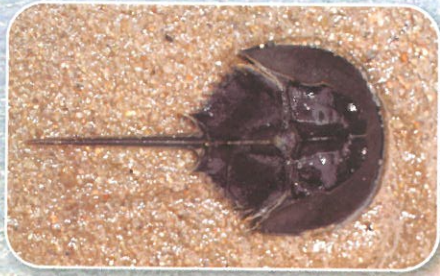


本港的小馬蹄蟹分佈
Local distribution of juvenile horseshoe crabs

呼吸 Respiration

像其他無脊椎的海洋動物一樣，馬蹄蟹用腹部下面的鰓攝取溶解在水中的氧。在沙灘時，也可用濕潤的鰓攝取空氣中的氧氣。

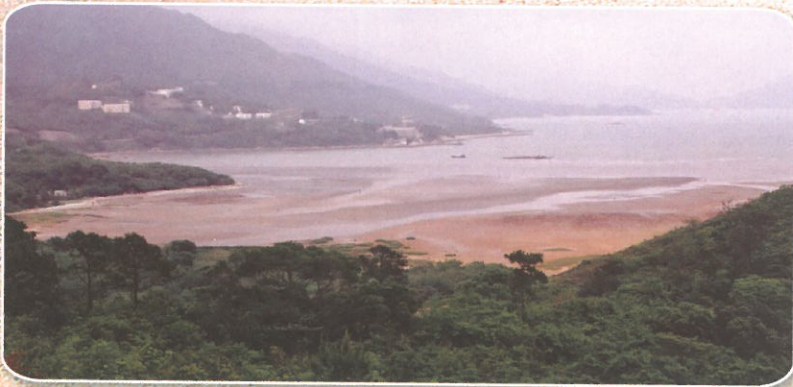
Like other marine invertebrates, horseshoe crabs get oxygen from water through their gills on the underside of the abdomen. When exposed on a beach horseshoe crabs can also breathe in air if their gills are moist.



中國蟹 (幼體)
Tachypleus tridentatus
(juvenile)



圓尾蟹 (幼體)
Carcinoscorpius rotundicauda
(juvenile)



在本港，大嶼山水口是小馬蹄蟹其中一個棲息地
Shui Hau, Lantau, a nursery ground for horseshoe crabs in Hong Kong



馬蹄蟹的鰓像一頁頁的書
Book-like gills of horseshoe crab

覓食 Feeding

馬蹄蟹主要的食物是蠕蟲、甲殼類動物和死魚。牠們在海底或沙灘上爬行時，會用第一對像鉗形的腿尋覓食物。因沒有上下顎，故用纖毛腿上的刺碾碎食物，然後送入口中。

Horseshoe crabs feed mainly on marine worms, molluscs and dead fish. When crawling on the sea bottom or beach, they use the first pair of their pincer-like legs to detect food. Horseshoe crabs do not have any jaws so they use the spiny bases of their other ciliated legs to crush the food and then pass the small food particles to their mouth.



一隻馬蹄蟹正進食蠕蟲
A horseshoe crab feeding on
a juvenile marine worm

沙灘上留下一條
長長的馬蹄蟹足跡
A horseshoe crab
trail on the sand



退潮時，小馬蹄蟹從
沙中爬到沙灘上覓食
During low tide, juvenile
horseshoe crabs will emerge
from the sand to feed

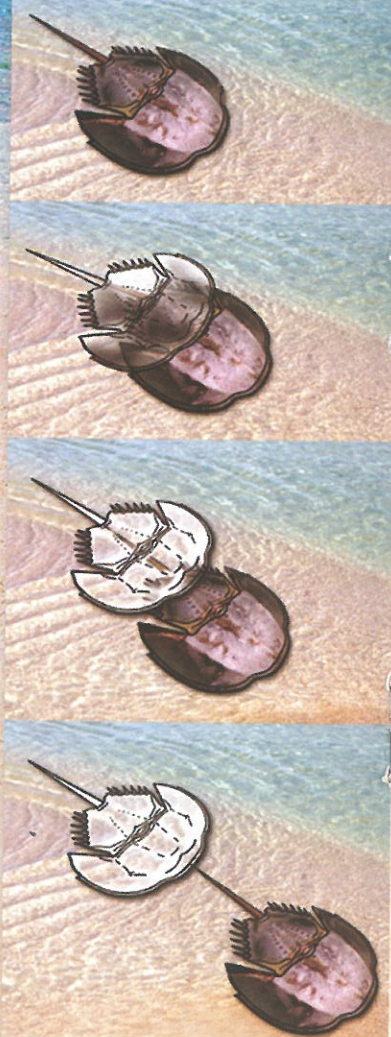
成長 Growth

像其他有殼的動物一樣，馬蹄蟹成長時會長出新殼，然後脫去舊殼。每一次脫殼之後，馬蹄蟹會比以前增大約四分之一。

Like other animals with shells, horseshoe crabs grow new shells and shed the old ones. After each moult, the horseshoe crab is about one-quarter larger than what it was before.

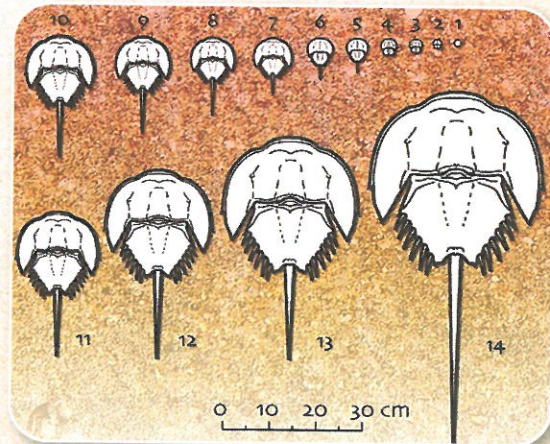


一隻馬蹄蟹正在脫殼
A moulting horseshoe crab



初生馬蹄蟹的寬度和長度均約為0.5厘米。經過差不多17次脫殼之後(年齡大約10歲)，便到達成熟期，牠們的長度和頭胸部寬度分別約為50和30厘米。馬蹄蟹相信可活到18歲，甚至更久。

A newly hatched horseshoe crab is about 0.5 cm in length and width. After moulting about 17 times (at about age 10) they reach sexual maturity with a length of about 50 cm and a width of about 30 cm. It is believed that a horseshoe crab can live for 18 years, or even longer.



脫殼一至十四次的馬蹄蟹
Size of the first 14 instars of horseshoe crab

繁殖 Reproduction

產卵季節裡，雄性和雌性的馬蹄蟹在漲潮時擠滿沙灘。當找到伴侶時，雄性的馬蹄蟹緊緊地抓住雌性的身體，雌性馬蹄蟹在高潮帶沙礫中挖巢產卵，雄性馬蹄蟹給雌性馬蹄蟹拖着經過巢的上面時，便將卵子受精。之後，牠們便會回到海底棲息。

During the spawning season, both male and female horseshoe crabs crowd up on the beach at high tide. Upon finding a mate, the male will cling to the female's body. The female lays her eggs in a nest and the male fertilises them as he is dragged over the nest by the female. After spawning, the horseshoe crabs return to the sea bottom.



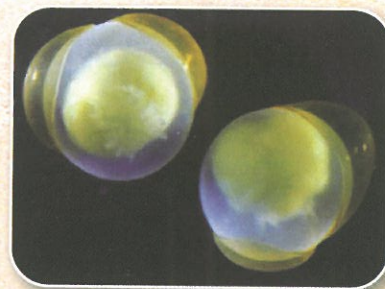
一對在沙灘交配的馬蹄蟹 (來源: Gary Brewer)
A horseshoe crab mating pair on a beach (Source: Gary Brewer)

馬蹄蟹的卵子細小，呈綠色半球體狀，直徑小於一毫米。受精卵通常需要一個月的時間發育，每一粒卵子內都包藏著馬蹄蟹的胚胎。稚馬蹄蟹經孵化後會游到淺水的潮間帶，便棲息於泥底裡，脫殼成長。

The eggs of horseshoe crabs are small green spheres, which are less than 1 mm in diameter. Fertilised eggs usually take about a month to develop and each egg has an embryo folded inside. After hatching, the miniature horseshoe crabs will swim around in the shallow intertidal areas and then settle to the bottom and moult.



馬蹄蟹的卵 (綠色的球體)
Eggs of horseshoe crabs
(the green spheres)

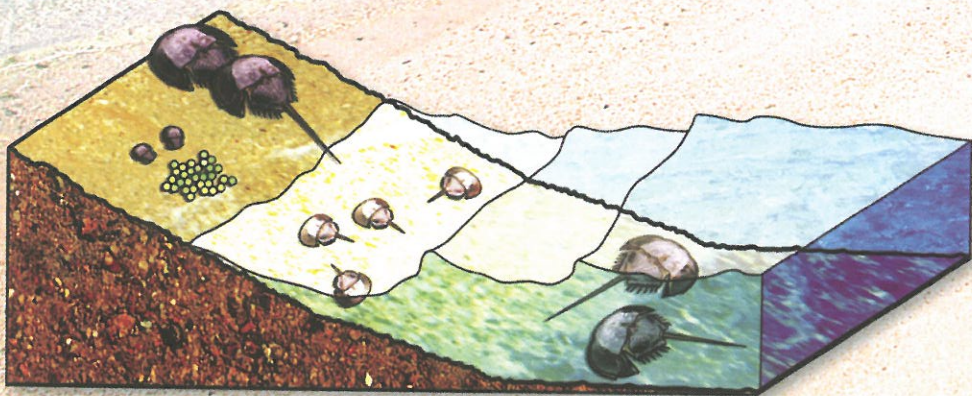


馬蹄蟹的胚胎
Horseshoe crab embryos

(來源: 台灣中央研究院動物研究所) (Source: Taiwan Academia Sinia, Institute of Zoology)

小馬蹄蟹在成長的最初幾年，通常在沙灘或泥灘的潮間帶度過，其後便遷離岸邊到海底生活。

Juvenile horseshoe crabs normally spend their first few years on intertidal habitats, such as sandy beaches and mudflats. They will then move offshore and live at the sea bottom.

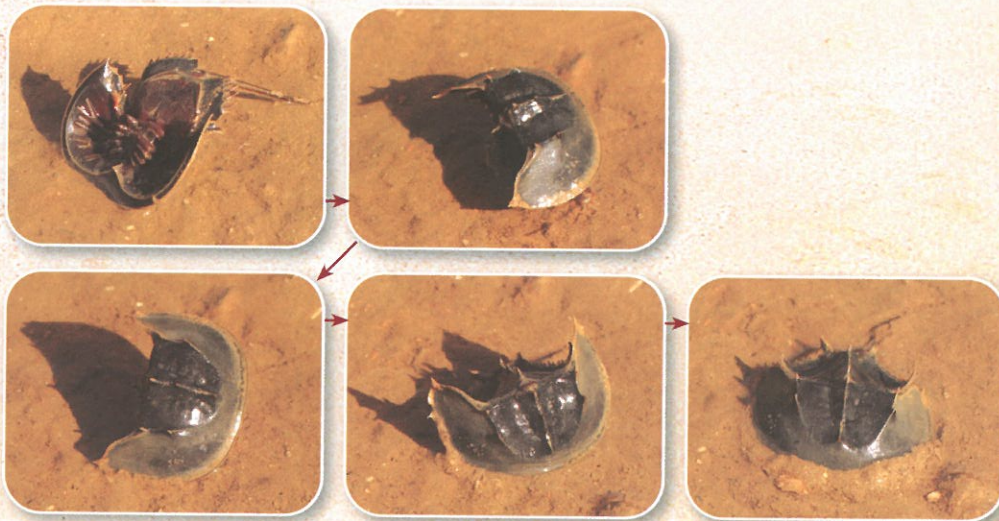


馬蹄蟹的棲息地
Habitats of horseshoe crabs

有趣的行為 Interesting Behaviour

在沙灘上的馬蹄蟹有時會被海浪翻倒，腹上背下的擱淺，動彈不得。牠們要盡快用那條尖長的尾巴把自己翻轉過來，回復背上腹下的位置，否則便會乾涸而死。

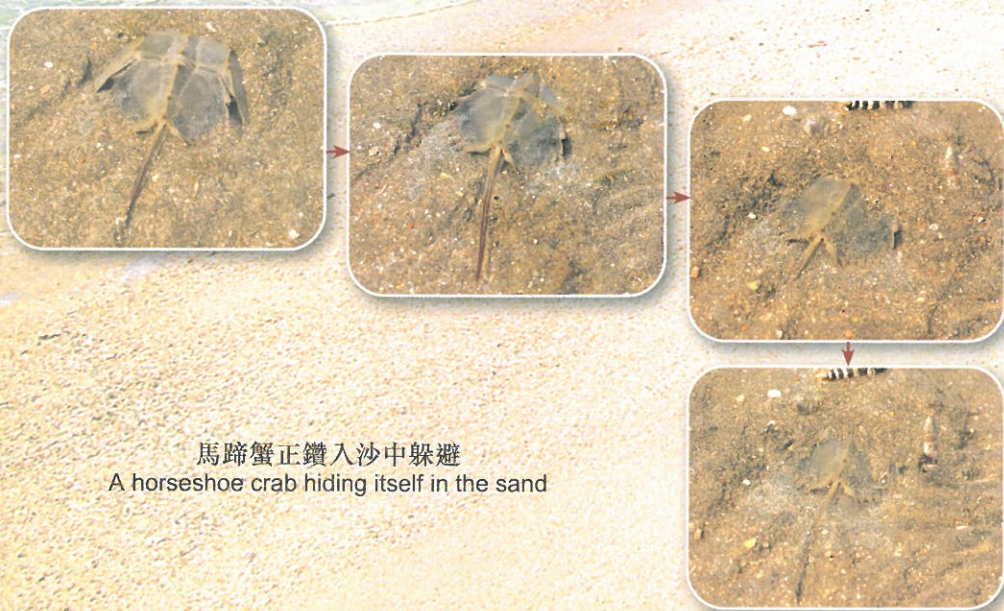
Sometimes a horseshoe crab may overturn in surf and become stranded on a beach. The horseshoe crab has to turn itself over quickly using its long tail, or it will dry up and subsequently die.



馬蹄蟹利用尾巴將自己翻轉過來
A horseshoe crab uses its tail to overturn itself

馬蹄蟹在海灘很容易被捕獵者發現，當受到任何威脅時，便立刻潛入沙中躲避。

Exposing themselves to predators on a beach is dangerous. Therefore, when sensing any sign of threat, horseshoe crabs will bury themselves in the sand.



馬蹄蟹正鑽入沙中躲避
A horseshoe crab hiding itself in the sand

存護情況 Conservation Status

馬蹄蟹在全世界的數量急劇下降。本港許多沙灘以往都有不計其數的馬蹄蟹，但自1980年後，牠們已從很多地區消失了，如今只可在某些沙灘上看到，如后海灣、大嶼山和沙頭角海，從前經常出沒的地方如吐露港等，現在已經很少看見牠們的蹤影了。

The horseshoe crab population has dropped dramatically worldwide. Horseshoe crabs once thrived on many local beaches. However, since the 1980's they have disappeared from many areas. Nowadays, they can only be found on certain beaches in Deep Bay, Lantau Island and Starling Inlet and are seldom found in places that we used to see them, such as Tolo Harbour.



在繁殖的季節，許多海鮮酒家都有出售成熟的雌性馬蹄蟹，主要因為有些人喜歡吃牠們身上的卵子。然而，吃掉馬蹄蟹的卵子，即等如殺死成千上萬的小馬蹄蟹，還有那隻經歷最少10年時間才能長成的雌性馬蹄蟹！為了令本港的馬蹄蟹能夠繼續存活下去，除了致力減少污染和保護環境外，亦請不要購買和食用馬蹄蟹。

During the breeding season, mature female horseshoe crabs are sold in many seafood restaurants for their eggs. However, eating the eggs means killing thousands of horseshoe crabs as well as killing an adult horseshoe crab which took at least 10 years to reach sexual maturity. In addition to your support to reduce pollution and protect our environment, you can help to conserve our horseshoe crabs by not eating and buying them.



馬蹄蟹被困在海鮮酒家的水缸內
Horseshoe crabs in the tank of a seafood restaurant

馬蹄蟹在地球上存活了千百萬年，牠們的未來，就在你我的手上，視乎我們是否真正了解牠們對環境和人類的重要性。

Horseshoe crabs have successfully survived for millions of years. Their future depends on how much you understand and appreciate their importance to our environment and us.



漁護署職員在大嶼山深屈尋找馬蹄蟹
AFCD staff searching for horseshoe crabs in Sham Wat, Lautau