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↘蘇門達臘產高加索大兜蟲・110 mm・2005
C. caucasus from Sumatra.

銅身兜蟲屬（南洋大兜蟲）

The Genus *Chalcosoma*

↙婆羅洲大兜蟲・105 mm・2003
C. moellenkampi from Borneo.

↓蘇拉維西產阿特拉斯大兜蟲・80 mm・2003
C. atlas from Sulawesi.

在希臘文中，「chalco」是「銅」，「soma」是「身體」，組合起來，「Chalcosoma」就是「銅體」。顧名思義地，***Chalcosoma***屬裡頭的三個成員，分別為高加索大兜蟲***C. caucasus***、阿特拉斯大兜蟲***C. atlas***、以及婆羅洲大兜蟲***C. moellenkampi***，全身都泛著古銅色到青銅色的光澤。這些大兜蟲都長著三根宛如西洋劍的巨大犄角，牠們又被封為「南洋三劍客」。這個封號絕非浪得虛名。牠們有極高的戰鬥慾望，堪稱是世界上最兇猛的大兜蟲。其中體型最大的是***C. caucasus***，可以突破130 mm。此種的產地為泰國、馬來西亞、爪哇、蘇門達臘。***C. atlas***地產地為泰國、印度、蘇門達臘、蘇拉維西、菲律賓、婆羅洲。***C. moellenkampi***的產地為婆羅洲。這一屬的兜蟲亦被稱為「南洋大兜蟲」。由於***Chalcosoma***屬的兜蟲產量相當穩定，原產地離台灣又近，因此價格也十分平易近人，是很不錯的入門蟲種。

C. caucasus近年來被正名為***C. chiron***。這是因為***C. caucasus***是在1801年發表的，但是早在1789年便已經有科學家以***C. chiron***發表這隻蟲。不過由於***C. caucasus***已經用了兩百年，所以很多人還是習慣使用***C. caucasus***.

↗中角型高加索大兜蟲。95 mm。2003
Medium ***C. caucasus***.

"Chalco" means "copper" in Greek. "Soma" means "body." Not surprisingly, the beetles in the Genus ***Chalcosoma***, which are ***C. caucasus***, ***C. atlas***, and ***C. moellenkampi***, exhibit strong copper luster ranging from green to violet. These beetles grow three majestic horns which are definitely not for decoration. ***Chalcosoma*** beetles have the strongest instinct to fight and will attack anything that provokes them. Of the three, ***C. caucasus*** is the largest, capable of exceeding 130 mm. It lives in Thailand, Malaysia, Java, and Sumatra. ***C. atlas*** can be found in Thailand, India, Sumatra, Sulawesi, the Philippines, and Borneo. ***C. moellenkampi*** lives in Borneo. The three species are considered common and as a result not pricy. This makes them good beginner beetles.

C. caucasus has been recently renamed ***C. chiron***. This is because ***C. caucasus*** was

↗蘇門達臘產高加索大兜蟲。105 mm。2003
C. caucasus from Sumatra.

↗蘇拉維西產阿特拉斯大兜蟲。80 mm。2003
C. atlas from Sulawesi.

外觀上而言，***C. c.***的頭角中間部位會有一個大齒突。***C. a.***的頭角末端會有一排或是雙排的鋸齒狀隆起，但是在小型個體卻會變成明顯的對稱雙齒突。***C. m.***的胸角弧度是由上往下，有別於***C. c.***和***C. a.***的由外往內。

基本上不建議把玩南洋大兜蟲，因為牠們的爪子既巨大又鋒利，而且還有可能用犄角對手掌發動攻擊。前胸背板和身體之間的縫隙更是絕對不能碰，否則手指頭的一塊肉就會被夾斷，這是親身經驗。由於雄蟲相當神經質，因此和雌蟲交配時應格外注意，以免雌蟲被分屍。交配方式請比照長戟大兜蟲一章。

除了少數高加索大兜蟲的族群以外，此屬的產地通常在海拔1000公尺以上，因此，理想溫度範圍為22-26°C。儘量不要讓溫度超過28°C。雌蟲通常產30-60粒卵，不過有些個體可產超過100粒卵。卵期約30天。幼蟲孵化後使用發酵木屑飼養。一齡幼蟲期約30天。二齡幼蟲期45-60天。轉三齡以後可在發酵木屑

published in 1801. But the same beetle had been described under the name ***C. chiron*** as early as 1789.

Morphologically, ***C. c.*** has a prominent denticle at the mid section of the cephalic horn. ***C. a.*** has one or two rows of saw-shaped protrusions near the tip of the cephalic horn, but these protrusions become a pair of prominent denticles in minor specimens. ***C. m.***'s thoracic horns curve downward where as those of ***C. c.*** and ***C. a.*** curve sideward.

Handling ***Chalcosoma*** beetles is not recommended. They have large and sharp claws capable of scratching and slicing. Some may even attack the hand with their powerful horns. The area between the pronotum and the abdomen must not be touched or a piece of flesh on the finger will be pinched off. Males are extremely easily provoked and mating should be done with caution to prevent females from being decapitated. Please refer to the chapter ***Dynastes hercules*** for safe mating procedures.

Chalcosoma beetles are found in mountainous regions over 1000 meters

↗ 婆羅洲大兜蟲。105 mm。2003
C. moellenkampi from Borneo.

↗ 婆羅洲大兜蟲雌蟲。62 mm。2003
C. moellenkampi female.

中埋中朽木供幼蟲啃食。

雖然此屬的幼蟲可共養，但還是建議各自分開飼養。一般剛換完食物後，各種兜蟲幼蟲都會因為受干擾而在腐植物中四處鑽挖，直到幾分鐘後，牠們認為危險已遠離才慢慢地靜下來。在這鑽挖的過程中，共養的幼蟲相遇的機會極大。個性溫和的幼蟲碰面並無大礙，頂多擦身而過。但***Chalcosoma***屬的幼蟲受

above sea level. The ideal temperature range is 22-26^{0}C. Temperature should not exceed 28^{0}C. Each female oviposits 30-60 eggs, although some individuals oviposit over 100 eggs. Egg duration is about 30 days. Fermented decayed wood flakes is recommended for the larvae. L1 stage lasts about 30 days. L2 stage lasts 45-60 days. A piece of middle decayed wood can be buried in the substrate for the larva to chew on.

Larvae can be kept together, though

↗老熟雄性高加索大兜蟲幼蟲。南洋大兜蟲的幼蟲非常兇猛。拿取時務必小心，否則手指頭見血的機率極高。1998
Full-grown male ***C. caucasus*** larva. ***Chalcosoma*** larvae are vicious. If not handled carefully, your finger will bleed.

↗南洋大兜蟲的幼蟲特別兇。圖為三齡初期高加索大兜蟲。2003
Chalcosoma larvae are especially aggressive. Pictured is early L3 ***C. caucasus***.

驚時攻擊性極強，兩隻自認為在逃命的幼蟲一旦觸碰很有可能立刻互咬起來。我曾經看過1隻因以上原因，而一口氣被咬斷3隻腳，以及2隻被咬後因流血不止而死亡的幼蟲。在不受干擾的情況下，如果兩隻幼蟲靠得太近，當其中一隻發現對方時便會往反方向退去，絕對不會打起來。但是要完全不驚嚇幼蟲是不可能的，因為更換食物是無法避免的程序。也因此，最安全的方法就是不要將***Chalcosoma***屬的幼蟲養在同一個容器內。

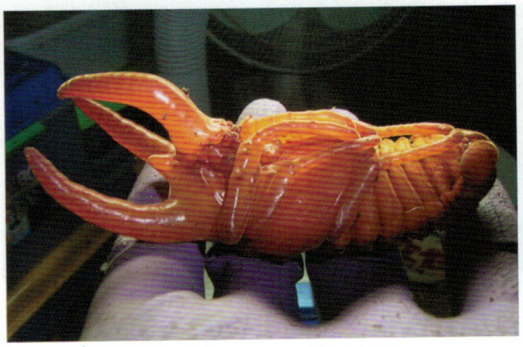
雄性幼蟲期12-18個月。雌性幼蟲期10-16個月。前蛹期45-60天。蛹期55-90天，越大型個體越久。蟄伏期約60天。以***C. a.***而言，超過55公克的雄性幼蟲就開始有機會羽化成長角型個體。***C. c.***則需要90公克以上。成蟲過蟄伏後一般活4-5個月，但有些個體可活長達8個月、也有些個體只能活數個星期。

↗南洋大兜蟲的幼蟲經常躺著爬。圖為高加索大兜蟲。2003
Chalcosoma larvae often craw on their back. Pictured is ***C. caucasus***.

not recommended. The reason is that larvae craw frantically after each substrate change. During this time, communal larvae are likely to run into each other. Docile species don't harm each other. But aggressive ***Chalcosoma*** larvae are likely to lunge at and hurt each other. I have seen one larva with three legs chopped off and two larvae that bled to death. When larvae are not disturbed and one larva notices the presence of another, it turns around and moves away. But it would be impossible to not frighten any larvae in captivity because substrate change is a necessary procedure. As a result, the safest way is keep ***Chalcosoma*** larvae individually.

Larval duration for males is 12-18 months and 10-16 months for females. Prepupa period is 45-60 days. Pupa period is 55-90 days. The larger an individual, the longer. New adults stay inactive for about 60 days. ***C. atlas*** with a maximum larval weight of 55 grams may become a major male. ***C. caucasus*** needs at least 90 grams to become major. Once active, adults live 4-5 months, although some may live as long as 8 months and some as short as a few weeks.

↗高加索大兜蟲雌蛹。1998
Female *C. caucasus* pupa.



↗阿特拉斯大兜蟲的蛹。2007。張懷仁攝
C. atlas pupa. Photo by Willy Chang

↗即將羽化的阿特拉斯大兜蟲蛹。張懷仁攝
C. atlas pupa ready to eclose. Photo by Willy Chang

↗ 展翅中的阿特拉斯大兜蟲。張懷仁攝
C. atlas spreading wings. Photo by Willy Chang

↗ 羽化後數個小時的阿特拉斯大兜蟲。84 mm。張懷仁攝
C. atlas few hours after eclosion. Photo by Willy Chang

頂三角兜蟲工程

Project Triceratops Beetle

By Orin McMonigle
歐倫・馬克馬尼格著

頂三角兜蟲*Phileurus truncatus*是金龜科兜蟲亞科的成員。這是一種大型、怪異、肉食性的金龜。牠幾乎遍佈整個北美：部分加拿大、墨西哥，以及整個美國。

The Triceratops Beetle ***Phileurus truncatus*** is a member of the family Scarabaeidae (Dung beetles, Chafers, Rutelines, etc.), subfamily Dynastinae (Rhinoceros beetles). This is a large, peculiar, carnivorous Scarab. The habitat of ***P. truncatus*** extends throughout much of North America: parts of Canada, Mexico and all of the US.

↗頂三角兜蟲。40 mm。2006。馬克馬尼格攝
Phileurus truncatus. Photo by McMonigle

目標：

1. 查出頂三角兜各個生活史階段的需求。
2. 把在人工環境產下的卵粒養成成蟲、讓人工飼育個體交配並產生有繁殖力之後代。終極目標是確認重覆極限 (在很多種類身上可以發現要讓野生母蟲產卵是非常容易的事，但是要讓人工飼育個體產受精卵卻是極度地困難)。
3. 分享飼育技術以及生活史。

Objectives:

1. To determine the requirements for all life stages of the Triceratops Beetle.
2. To rear larvae from captive laid eggs to adulthood, mate captive reared adults, and produce viable offspring. The purpose of this goal is to show repeatability. For many insects it can be easy to collect eggs from wild-caught females but far more difficult to collect viable eggs from captive reared animals.
3. To share culture and life cycle information with hobbyists and coleopterists.