



↙ 雌性的塔斯馬尼亞金鍬。22 mm。
2003
Female *L. tasmaniae*.



↙ 塔斯馬尼亞金鍬。塔斯馬尼亞島。26mm。2003
Lamprima tasmaniae. Tasmania.

色鍬

Color Stags

↘ 南美黑金鍬形蟲。Streptocerus屬裡頭只有牠一個種類。
此鍬形蟲的飼育方式和一般色鍬相同。智利。30 mm。
2003

Streptocerus speciosus. This is the only species in its
genus. It is bred like other color stags. Chile





♂澳洲金鍬形蟲。28 mm。2003
Lamprima aurata from Australia.



♂雌性的澳洲金鍬形蟲。20 mm。2003
Female *L. aurata*.



♂藍色型的雌性澳洲金鍬形蟲。20 mm。2003
Blue *L. aurata* female.



♂紅色型的雌性澳洲金鍬形蟲。20 mm。2003
Red *L. aurata* female.

Lamprima 屬裡頭的鍬形蟲和彩虹鍬是一群非常特別的鍬形蟲。牠們擁有在其他鍬形蟲身上幾乎找不到的霓虹金屬光澤，因此牠們又被統稱為「色鍬」。牠們的奇異並不止於此。牠們的蛹在形態上也舉世無雙。一般而言，鍬形蟲的蛹的頭部和六肢都朝向尾部，但是色鍬的頭部和前腳卻是朝向前方。第二，一般雄性鍬形蟲的生殖器在蛹階段呈簡單的回鉤狀，但是色鍬的卻是呈極度的螺

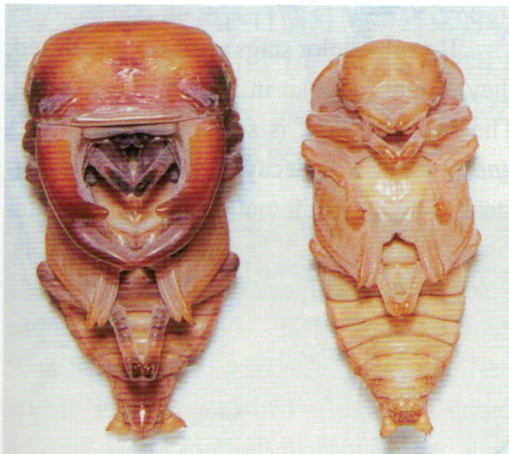
Phalacrognathus muelleri and stag beetles in the Genus *Lamprima* are in a category of their own. They possess neon metallic shines found in no other groups of stag beetles. They are also known as "color stags." Their pupae are also morphologically unique in three ways. One, whereas the head and legs of regular stag beetle pupae point to the posterior, the head and front legs of color stags point to the anterior. Two, the sexual organ of



旋狀。第三，一般的鍬形蟲在羽化的時候大顎都已經發育完畢，但是雄性色鍬的大顎卻是在羽化後才開始變大！牠們的大顎就好像是蟬和蝴蝶的翅膀，剛羽化時是完全嬌小、柔軟的，必需靠著血液的充灌才得以慢慢地脹大。我在1998年第一次目睹時，實在是驚訝地說不出話來！全世界再也找不到羽化時會「展顎」的鍬形蟲。

male color stag pupae is shaped like a cork screw. Three, whereas the mandibles of regular stag beetles are fully formed by eclosion, the mandibles of color stags enlarge only after eclosion. Their mandibles are like the wings of butterflies. At the onset of eclosion, they are small and tiny. They “spread” only after blood is pumped into them.

P. muelleri is hardy, neither 10°C nor 30°C can kill them. However, larvae certain-



一般的鍬形蟲蛹的頭部與六肢一定都是朝向尾部。
日本大鍬形蟲。1998
Almost all stag beetle pupae have their heads and legs pointing to the posterior. Pictured are *Dorcus curvidens binodulosus* pupae.



金鍬屬和彩虹鍬的蛹的頭部及前二肢不朝向尾部。仔細看看可見生殖器為嚴重的螺旋狀。33 mm。1998

The head and forelegs of *Lamprima* and *Phalacrognathus muelleri* pupae point to the anterior. Their male sexual organ is cork shaped.



巴布亞(印尼)金鍬的蛹一開始是黃色的，但是前胸背板會漸漸地長出與黴菌相同的暗綠色。第一次看見時，還以為是蛹發霉爛掉了。

Lamprima adolphinae pupae are yellow in the beginning, but then moldy green starts to develop on the pronotum. Do not mistaken the pupae for being rotten.



所有鍬形蟲羽化時大顎都已經定型，唯有金鍬屬與彩虹鍬會「展顎」。可看見大顎顏色為乳白色。
Other than the Genus *Lamprima* and *Phalacrognathus muelleri*, all stag beetles have their mandibles fully formed by eclosion.



展顎後的大顎變得又長又粗。39 mm
After “spreading” the mandibles become long and thick.



正在吸食西瓜汁的中齒型彩虹鍬。這隻是全台灣的第一隻彩虹鍬。50 mm。2001
Medium rainbow stag beetle feeding on watermelon juice. This is Taiwan's first rainbow stag beetle.

彩虹鍬的生命力極強，遇到10度的寒流或是30度的熱浪都不會死亡，但是在上述的情況下，幼蟲的生長狀況肯定不理想，而雌蟲也不會產卵。最適合彩虹鍬的溫度為22-26度。色鍬的雄蟲個性溫和，不會攻擊雌蟲，因此雌雄可以長期共養，但為了避免雄蟲不斷地求偶消耗體力，共養一個星期後便可將牠們分開。

由於色鍬的雌蟲體型寬厚，因此不難推測牠們不會鑽入硬朽木中產卵。產卵箱的佈置和*D. antaeus* (安達佑實大鍬) 的相同，但產卵木請用軟朽木。色鍬的典型產卵方式為鑽入朽木、把內部咬成木屑，然後在木屑堆中產卵。有些個體也願意直接在發酵木屑中產卵，但木屑的顆粒一定要夠細膩。彩虹鍬的收成時機為雌蟲入產卵箱2個月後。每次可收成大約30隻幼蟲。雌蟲取出後可讓其休息1個星期再置入新的產卵環境。雌蟲一生可產超過100粒卵。



正在吸食西瓜汁的彩虹鍬雌蟲。35 mm。2001
Female rainbow stag beetle feeding on watermelon juice.

ly don't grow well in such extreme temperatures nor do females oviposit. The ideal temperature range is 22-26°C. Male color stags are docile. They can be kept with females. However, to prevent exhaustion from constant courtship, the male should be removed from the tank after one week.

Because color stags are thick and round, they do not oviposit in hard decayed wood. The breeding tank is set up like that of *D. antaeus*, but soft decayed wood is used instead. The typical female chews up the interior of the wood and lays eggs in the flakes. Some females oviposit directly in fermented decayed wood flakes, but the flakes must be fine in size. The best time to harvest *P. muelleri* larvae is two months after the female was placed in the tank. Each harvest yields about 30 larvae. The female should be allowed to rest and feed for a week before being placed in another breeding tank. Each female can oviposit over 100 eggs.



↗ 軟朽木中的彩虹锹卵。這一類的雌蟲喜歡把朽木內部咬成屑，然後在屑堆中產卵。2002

P. muelleri eggs. Females like to chew the interior of the decayed wood into flakes and oviposit in the flakes

如果溫控不是問題，最適合的食材為菌絲瓶，不但幼蟲接受度高，而且彩虹锹還會羽化出身長超過60 mm的超大個體。如果無法提供控溫環境，發酵木屑是最好的選擇，但平均體型會比菌絲瓶個體稍小。

彩虹锹的卵期約30天。一齡幼蟲期約30天。二齡幼蟲期約45天。雌蟲幼蟲期約6個月，雄蟲8-11個月。20公克的幼蟲可羽化成60 mm以上的成蟲。蛹期以及蟄伏期各約1個月。羽化3個月後可交配繁殖。成蟲過蟄伏後可活1-1.5年。



↗ 大齒型的彩虹锹。63 mm。2002
Major *P. muelleri*.



↗ 三齡的彩虹锹幼蟲。細長的腹部是這一類幼蟲的特色。2002

Third instar *P. muelleri* larva. *P. muelleri* and *Lamprima* larvae are characterized by narrow abdomen.

If a cool environment can be provided, the most suitable substrate for *P. muelleri* larvae is kinshi bottle. Not only do larvae readily accept it, they also become extra major adults over 6 cm. If a cool rearing environment is not possible, the best substrate is fermented decayed wood flakes. However, adults produced don't get as big.

Egg duration for *P. muelleri* is about 30 days. L1 lasts about 30 days. L2 lasts about 45 days. Larval duration for females is about 6 months and 8-11 months for males. Larvae with a maximum weight of 20 grams become adults over 60 mm. The pupa period is about 30 days. New adults stay inactive for about 30 days. They can be mated three months after eclosion. Once active, adults live 1-1.5 years.

The life cycle of *Lamprima* stag beetles is about half that of *P. muelleri*. Larvae are harvested one month after the female was placed in the tank. Larval duration for



↗台灣的第一隻彩虹鍬。蛹長45 mm。2001
Taiwan's first rainbow stag beetle.



↗ At 15:00



↗羽化開始。6月14日 10:10
Beginning of eclosion. June 14th at 10:10



↗ At 20:50



↗ At 10:30



↗6月16日 20:00。終於「展顎」完畢。
June 16th at 20:00. The mandibles are finally spread.



↗ At 10:43



↗6月24日 23:00。翅鞘呈現出「彩虹」光澤。50 mm
June 24th at 23:00. The rainbow colors show.

*Lamprima*屬的生活史時間長度只有彩虹鍬的一半。幼蟲收成期為雌蟲入產卵箱1個月後。雌蟲的幼蟲期2-4個月，雄性4-5個月。前蛹期約14天。蛹期20-25天。蟄伏期15-20天。羽化1個月後可交配繁殖。成蟲壽命3-6個月。

females is 2-4 months and 4-5 months for males. The pre-pupa period is about 14 days. The pupa period is 20-25 days. New adults stay inactive for 15-20 days. They can be mated 30 days after eclosion. Once active, adults live 3-6 months.



♂即將交配的澳洲金鍬形蟲。
♂ 28 mm ♀ 20 mm。2003
L. aurata ready to mate.



♂澳洲金鍬形蟲三齡幼蟲。2003
Third instar *L. aurata* larva.



♂雌性巴布亞(印尼)金鍬形蟲的蛹。26 mm。2002
Female pupa of *L. adolphinae*.



♂剛羽化的巴布亞(印尼)金鍬形蟲雌蟲。26 mm。2002
Newly eclosed *L. adolphinae* female.



♂巴布亞(印尼)金鍬形蟲雄蟲。39 mm。1998
Male *L. adolphinae*.