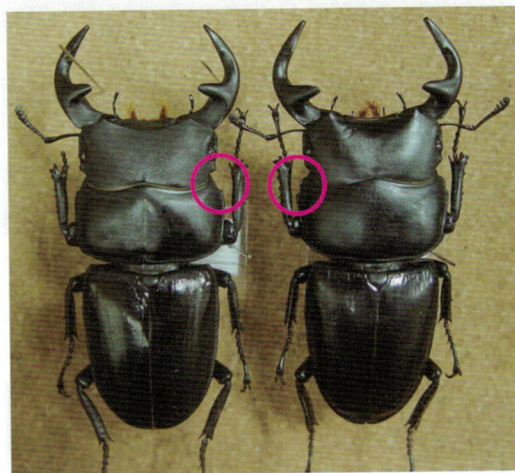




雌蟲第一年的產卵數並不理想，為個位數，但第二年便可以高達50粒。我們的做法是第一年讓新成蟲充分地休息和進食，到了第二年才進行繁殖。開始活動後成蟲可活18-36個月。

meters above sea level. Because this species needs to be reared with kinshi bottles, the rearing environment must not exceed 26°C with 22°C being ideal. Pre-pupa period 15-30 days. Pupa period 21-30 days. New adults stay inactive for 1-2 months. *D. grandis* does not reproduce well in the first year. But in the second year, females oviposit up to 50 eggs. Allow adults to become active for one year before breeding. Once active, adults live 18-36 months.



♂ 60 mm的DGG和DGM的比對。2007
Comparison of 60-mm *D. g. g.* and *D. g. m.*

↓ 原名亞種雄偉大锹形蟲。♂ 80 mm ♀ 50 mm。寮國種源。2000
D. g. g. Laos origin





↓ 蘇門達臘巨扁。91 mm。2003
D. titanus, Sumatra



↘ 蘇拉維西巨扁。95 mm。2003
D. titanus, Sulawesi

扁鍬形蟲

Dorcus titanus



↘ 儘量不要被巨扁的大頭夾到。圖為巴拉望巨扁鍬形蟲。105 mm。2005
Try not to get bitten by giant titan. Pictured is *D. t. palawanicus*.



因為稍微扁平的外表，*Dorcus titanus*在日本被稱為「扁鍬形蟲」。而台灣也採用相同的中文名稱。扁鍬形蟲在2000年5月20號被喜歡開玩笑的蟲友正名為「總統鍬形蟲」。不過時光飛逝，總統鍬形蟲也已經卸任。扁鍬形蟲是台灣最常見的鍬形蟲，甚至連都市的公園裡都可以發現牠的蹤跡。而能夠讓牠縱橫四海的最大功臣就是：牠不怕熱。也因此，牠是絕佳的入門蟲種。家裡沒有溫控設備的蟲友也能夠輕鬆地飼育牠。扁鍬形蟲的分佈非常廣闊，從韓國一直南下到印尼都有牠的蹤跡。扁鍬形蟲有至少17個亞種，我們寶島的亞種叫做*Dorcus titanus sika*，算是中型的亞種，雄蟲可達75 mm。但是住在東南亞的扁鍬形蟲體型就非常可怕了。牠們被統稱為「巨扁鍬形蟲」，體長超過100 mm。

現在回想起來是非常美好的回憶。當時2003年，是一個風和日麗的下午。我們一人捧了好幾個大容器，和華視攝影團隊緩緩步入大安森林公園。那一天我們備齊了世界上最具代表性的兜鍬活體，準備為觀眾好好介紹一番。很快地，長戟、南洋、毛大象、白兜、戰神、彩虹鍬都放在手上介紹完了，接下來剩下最後一隻：巴拉望巨扁鍬形蟲。我和柯心平互看一下以後沒人敢把牠放在手上。牠實在是太兇了，而且還會一直往下咬，如果把牠放在手上鐵定馬上皮開肉綻。牠的大顎合起來時還會發出磨刀的聲音。最後只好把牠放在樹幹上，用一根小樹枝對牠指指點點。巨扁

Due to its flat shape, *Dorcus titanus* is known as the “flat stag beetle” in Japan and Taiwan. It is the most common stag beetle in Taiwan and can even be found in metropolitan parks due to its ability to tolerate heat. As a result, it is a great beginner beetle. Even the hobbyist without a climate-controlled rearing environment can culture this species with ease. *Dorcus titanus* has an extensive distribution, from Korea down to Indonesia. There are at least 17 subspecies. The variety found in Taiwan is *Dorcus titanus sika*. It's a medium subspecies capable of reaching 75 mm. However, some varieties in Southeast Asia are true titans. They are capable of exceeding 100 mm.

From 2002 to 2003 I hosted a nature show on television. Rhinoceros and stag beetles were set to be the topic for one of the episodes. Ko Hsin-ping and I brought to the set some of world's most impressive species. One by one, beetles such as *D. hercules*, *C. caucasus*, *M. elephas*, *D. granti*, *M. mars*, *P. muelleri* were placed on our palms and introduced to the audience. Only one beetle remained. It was a *D. titanus*. We looked at each other and neither of us had the courage to let it perch on the hand. It was simply too aggressive. If bitten by those jaws, it would be impossible not to bleed. In the end, we could only let it perch on a tree limb and introduce it with a pointing stick. Perhaps *D. titanus*' only drawback is its aggressive temperament.

In reality, only three subspecies are “titans.” They are *D. titanus titanus*, *D. t. ty-*



↑ 蘇門達臘巨扁。92 mm。2002
D. titanus. Sumatra

锹形蟲不論是體型上或是個性上都令人震撼，也因此牠的希臘學名取得相當貼切：泰坦巨人（古希臘神話中被宙斯擊敗並打入地獄的巨人群）。

雖然扁锹形蟲的亞種繁多，但真正稱得上巨扁锹形蟲的只有 *Dorcus titanus titanus*、俗稱「帝王扁锹」的「堤風巨扁锹形蟲」*Dorcus t. typhon*，以及「巴拉望巨扁锹形蟲」*Dorcus t. palawanicus*。巴拉望巨扁锹形蟲來自於菲律賓西部的巴拉望島，擁有修長又充滿齒突的大顎，讓牠贏得「世界上最長的巨扁」的頭銜，體長可達110 mm。堤風巨扁锹形蟲來自於菲律賓北部的呂宋島東部，體長可達105 mm。原名亞種的分佈相當廣泛，從馬來半島、蘇門達臘、爪哇、婆羅洲、蘇拉維西、到菲律賓都有其蹤跡。而來自於不同地區的個體大顎外觀又各有特色。舉例而言，有些第一齒突比較靠近大顎基部，並且有至少有六個



↗ 巴拉望巨扁。99 mm。2003
D. titanus palawanicus.

typhon, and *D. t. palawanicus*. *D. t. palawanicus* is found only on the island of Palawan in the Philippines. This is the world's heaviest stag beetle, capable of reaching 110 mm. *D. t. typhon* is found on the eastern part of the island of Luzon in the Philippines, capable of reaching 105 mm. *D. t. titanus* has an extensive distribution. It is found in Malaysia, Sumatra, Java, Borneo, Sulawesi, and the Philippines. *D. titanus titanus* from different regions have different mandibles. For example, some have the first set of denticles placed far away from the base and only a few denticles while others have the first set of denticles placed close to the base and many denticles. Giant *titanus* are great beginner beetles. Not only are they handsomely built, they are also tolerant of heat. This is because they are found in medium to low altitude mountains. Because *D. titanus* males are very aggressive, females are frequently lost to their mandibles. To prevent this, the male's mandibles can be temporarily



↑ 蘇門達臘巨扁。94 mm。2003
D. titanus. Sumatra

齒突，有些則第一齒突遠離大顎基部，並且齒突較少。巨扁可以說是最適合入門者的鍬形蟲，牠不但外形雄偉，飼育上也可以不用控溫，因為巨扁的棲息地為中低海拔。由於巨扁非常地兇猛又神經質，很容易發生把雌蟲咬死的意外。最保險的做法就是用包有塑膠皮的鐵線將大顎綁起來後再讓牠與雌蟲交配。一旦交配確認後便可以將雄蟲從產卵房取出。如果沒有親眼目睹交配，大約1個星期後也可將雄蟲取出。鐵線解開後，雄蟲有可能暫時失去大顎的活動能力，但是幾個星期後便會恢復。

產卵箱的佈置和 *Dorcus antaeus* (安達佑實大鍬) 的相同，但產卵木請用硬或中朽木，並且直徑超過15 cm。雌蟲有三種產卵方式。1.和 *curvidens* 大鍬一樣在木頭表面附近產卵。2.把產卵木內部咬成木屑，然後在木屑和木頭的交接處產卵。3.和 *antaeus* 大鍬一樣在發酵木



↙ 將雄蟲的大顎固定可避免雌蟲被攻擊。活體戴為愚 (Gekko) 提供。2008
Fastening male's mandibles prevents female loss.
Live specimen provided by Dai Wei-yu

ly cuffed with wire-embedded plastic strips. This practice does not prevent males from feeding. The male can be removed from the breeding container after mating is confirmed. If no mating is observed, keep the male in the breeding tank for a week. When the mandible tie is removed, the male may temporarily lose control of his mandibles. But mobility returns after a few weeks at most.

The breeding tank is set up like that of *D. antaeus*, but use hard or middle decayed wood at least 15 cm in diameter. Females oviposit in three ways. 1. Near the surface of the decayed wood like *D. curvidens*. 2. Chew the interior of the decayed wood into flakes and lay eggs at the boarder of flakes and solid decayed wood. 3. Chew on where the decayed wood meets the fermented substrate and lay eggs in the flakes produced like *D. antaeus*. Ideal time to retrieve larvae is two months after the female was placed



屑和產卵木的交接處將產卵木咬成大量的木屑，之後將卵產於木屑堆中。理想採收期為雌蟲放入產卵箱2個月後，平均產值是30頭幼蟲或是卵。雌蟲一生可產約50粒卵。卵期21-30天。幼蟲不論是發酵木屑或是菌絲都能養出好成績。但要特別注意的是，若是使用菌絲飼育，夏季時務必控溫於26度以內。雖然巨扁是鍬形蟲中最重的，幼蟲可達70公克，但大型幼蟲一樣可以在8到12個月內羽化，由此可見牠們的成長速度。一齡幼蟲長至脫皮成三齡幼蟲只需40-50天。若是使用1400 cc標準菌包飼養幼蟲，大約每2個月換一次菌包。如果從一齡或是二齡便投入菌包，雌性幼蟲通常在第二包化蛹，雄性幼蟲在第三或是第四包化蛹。如果使用3000 cc的大型容器飼養幼蟲，可以每3-4月再換飼料。老熟幼蟲如果在菌絲內亂鑽，則有可能是準備要做蛹室，但是菌絲太軟。此時只要把幼蟲換到壓緊的發酵木屑內便會製作蛹室。巨扁的前蛹期和蛹期各為21-45天，體型越大或是溫度越低，時間就越長。由於巨扁體型巨大，應特別注意容器的寬度，至少要有13 cm，否則過小的蛹室會造成化蛹或是羽化失敗。如果使用的是1400 cc的標準菌包，可將容器橫放。巨扁的蟄伏期30-60天。建議過蟄伏至少5個月後再進行繁殖。過蟄伏後成蟲可活12-18個月。

in the breeding tank. Each harvest yields an average of 30 larvae and/or eggs. Females oviposit up to 50 eggs. Egg duration is 21-30 days. Both kinshi bottle and fermented substrate produce giant beetles. However, whenever kinshi bottle is used, the ambient temperature must not exceed 26°C. Although giant titanus are the heaviest of stag beetles, with larvae capable of reaching 70 grams, they are able to eclose within 8 to 12 months of hatching. This shows how fast they grow. L1-L3 only takes 40-50 days. If keeping larvae in 1400 cc standard kinshi bags, bags should be replaced every two months. Female larvae usually pupate in the second bag while male larvae pupate in the third or fourth bag. If using 3000 cc kinshi bottles, substrate change can be prolonged to once every three to four months. If mature larvae dig endlessly in kinshi, they may be trying to find a suitable place to make their pupal cell. Transfer them to fermented decayed wood flakes and pupal cell formation should take place promptly. The pre-pupa and pupa period each takes 21-45 days. The larger the beetle and the lower the temperature, the longer the period. Rearing containers for giant male larvae should be at least 13-cm wide, or lack of space may result in pupation or eclosion failure. 1400 cc kinshi bags may be positioned horizontally. New adults stay inactive for 30-60 days. Allow adults to become active for at least 5 months before mating. Once active, adults live 12-18 months.



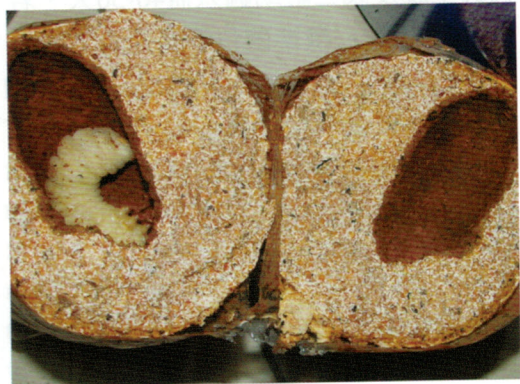
↗ 中朽木內的巨扁幼蟲。2003
Larvae in middle decayed wood.



↗ 二齡幼蟲。此時入菌瓶最適合。2003
Second instar larva. Now is good time for kinshi bottle.



↗ 51公克的巨扁幼蟲。活體戴為愚 (Gekko) 提供。2006
51-gram giant *titanus* larva. Live specimen provided by Dai Wei-yu



↗ 將菌絲包剖開後發現蛹室和前蛹。2003
Pupal cell and pre-pupa in kinshi.



↗ 蘇門達臘巨扁蛹。活體戴為愚 (Gekko) 提供。2003
Sumatran *D. titanus* pupa. Live specimen provided by Dai Wei-yu



↗ 巴拉望巨扁。95 mm。2007
D. t. palawanicus.

↓ *Regius* 型的大黑豔鍬形蟲大顎弧度較小。81 mm。2007
Regius type *Mesotopus tarandus* has less arched mandibles.



大黑豔鍬形蟲與黃金鬼鍬形蟲

Mesotopus tarandus and *Allotopus* Stag Beetles

大黑豔鍬形蟲和黃金鬼鍬形蟲就產地以及顏色而言，可以說是沒有任何的交集。前者產在非洲，後者分佈於東南亞。外觀上，大黑豔鍬形蟲顧名思義，又大又黑又亮，黃金鬼鍬形蟲則金黃色。共通點是：自養蟲史以來，這兩類考驗了飼育家的耐性以及科學精神。終於就在這幾年，日本飼育界突破了這兩類鍬形蟲的飼育瓶頸，而且牠們的飼育方式可以說是一模一樣。

Mesotopus tarandus and *Allotopus* stag beetles don't seem to have anything in common. The former is from Africa and the latter from Asia. In terms of appearance, the former is glossy jet black and the latter golden. But they do share one surprising similarity. For years, they put hobbyists' patience and perseverance to harsh test. It wasn't until very recent years that Japanese hobbyists finally figured them out. And as it turned out, they have identical breeding needs.

