

Kainan High School

succeeds in

breeding axolotls

可愛「六角恐龍」 開南成功繁殖



Top: An axolotl bred at the Kainan High School of Commerce and Industry in Taipei pictured on Oct. 9, 2009.
Above: Kuo Yan-chih points at axolotls in aquarium tanks at Taipei City's Kainan High School on Oct. 9, 2009.

PHOTOS: FANG PIN-CHAO, LIBERTY TIMES

最上圖：十月九日拍攝的這張照片中，是台北市開南商工成功繁殖的墨西哥蠔螈。
上圖：十月九日，在台北市開南商工，郭彥志老師指著水族箱內的墨西哥蠔螈。 照片：自由時報記者方貴照攝

Axolotls are native to Mexico and are among the top 10 of the world's most endangered species. The creatures, which some people call "six-horned dinosaurs," are a focus of interest because of their unusual appearance and their remarkable ability to regenerate limbs. Over the past few years, the aquatic animal and plant laboratory of Kainan High School of Commerce and Industry, a privately run school in Taipei City, has successfully researched techniques for breeding them in captivity. As the next step, the laboratory will collaborate with National Taiwan University's Institute of Biotechnology to do research on how the animals regenerate their limbs.

"My goodness! What an ugly fish!" "What do you mean? It's really cute!" Kainan High School's aquatic animal and plant laboratory has in recent times successfully bred several hundred axolotls of various varieties — white ones, yellow ones, black ones. Some of them look like salamanders, others like plumed basilisk lizards, and they often bring out contrasting reactions among the students.

Kuo Yan-chih, who is in charge of the aquatic animal and plant laboratory, says axolotls are in fact a kind of salamander. Some people call them "six-horned dinosaurs," the "six horns" referring to the three pairs of external gills on either side of their faces, which they use to "breathe." Axolotls originally come from Xochimilco Lake in central Mexico,

where they were once a favorite food of local gourmards. Because of habitat pollution and invasion by alien species, few individuals still live in the wild. Axolotls are now classified by the Washington Convention as a category two (critically endangered) species, and the magazine *American Scientist* listed them among the 10 kinds of animals that are on the verge of extinction. Kuo says that in the past people in Taiwan did not know much about axolotls, but they have been successfully bred in captivity for many years in the US and Japan, where they are commonly kept as pets. Last year the Taiwanese edition of *American Scientist* featured axolotls on its front cover and carried an article about the creatures, which can regenerate various parts of their bodies. This aroused more curiosity about the animals.

Conditions for breeding axolotls are rigorous. Over the past couple of years, Kuo has managed to establish a set of standard procedures, such as keeping the water temperature at 17°C when the animals are breeding and keeping the water clean to improve their survival rate. Kuo says that the lab, which started out with two dozen "six-horned dinosaurs," now has nearly a thousand of them, occupying almost all the lab's aquarium tanks. This gives Yang quite a sense of achievement. The only tough part is feeding the axolotls their daily meal, which takes two to three hours. "Luckily they only eat one meal a day,"

Kuo says. (LIBERTY TIMES, TRANSLATED BY JULIAN CLEGG)

被列為世界十大極度瀕危的墨西哥鈍口螈，俗稱「六角恐龍」，因為特殊外型與超強的肢體再生能力成為關注焦點。台北市私立開南商工水生動植物研究室近年來成功研發人工繁殖技術，下一步將與台大生物科技研究中心合作，投入肢體再生研究。

「唉喲！這魚怎麼這麼醜！」「哪會，很可愛耶！」開南商工水生動植物研究室近來成功繁衍數百隻的墨西哥鈍口螈，白的、黃的、黑的分屬不同品種，有的像娃娃魚、有的卻像水中蜥蜴，經常引起學生兩極化的反應。

水生動植物研究室負責人郭彥志老師說，墨西哥鈍口螈為蠔螈的一種，俗稱「六角恐龍」，「六角」意指臉部兩側三對呼吸用的外鰓，其原產地在墨西哥中部的霍奇米爾科湖，曾是當地老饕的最愛，因棲地污染與外來種入侵影響，野生個體數量稀少，目前華盛頓公約列為第二級瀕臨滅絕物種，也被美國「科學美國人」雜誌評選為全球十大瀕臨滅絕的動物之一。

郭彥志說，過去台灣對墨西哥鈍口螈了解不多，但在美國與日本卻已有長年的人工飼養經驗，經常被當作家中寵物。去年「科學人」雜誌以墨西哥鈍口螈為封面，介紹這種全身各部位都可以再生繁殖的物種，也讓各界對牠增添更多的好奇。

墨西哥鈍口螈繁殖的條件嚴格，郭彥志摸索兩年多，總算建制一套標準程序，包括繁殖期水溫控制在十七度、保持水質乾淨等，提高存活率。他說，「六角恐龍」從一開始的二十多隻到現在的近千隻，幾乎要佔滿研究室的水族箱，相當有成就感；唯一辛苦的是，每天餵完一餐就要花上二至三小時，「還好牠們一天只吃一餐」。（自由時報記者邱紹雯）

TODAY'S WORDS 今日單字

1. **aquatic** /ə'kwætɪk/ adj.

水生的 (shui3 sheng1 de5)

例: An amazing diversity of aquatic life can be found in this lake.

(這座湖中有非常豐富的水生物種。)

2. **collaborate** /kə'læbə,ret/ v.

合作 (he2 zuo4)

例: We're hoping to collaborate with a local printer to help us get the brochures ready.

(我們希望和當地的影印公司合作，以便完成廣告手冊。)

3. **external** /ɪk'stɜːnəl/ adj.

外部的 (wai4 bu4 de5)

例: Our last marketing director resigned due to external pressures from outside the company.

(我們前任行銷經理離職是因為受到來自公司外部的壓力。)

Two axolotls of different colors pictured in an aquarium tank at the Kainan High School of Commerce and Industry in Taipei on Oct. 9, 2009.

PHOTO: FANG PIN-CHAO, LIBERTY TIMES

十月九日，台北市開南商工水族箱內兩隻不同顏色的墨西哥蠔螈。

照片：自由時報記者方貴照攝

