漫遊在想像與知識的國度

展示雙年報(92 - 93年)

Roaming in the Kingdom of Imagination and Knowledge

Biennial Report of Exhibitions (2003-2004)

國立自然科學博物館

目錄

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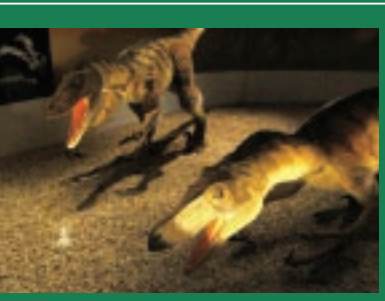
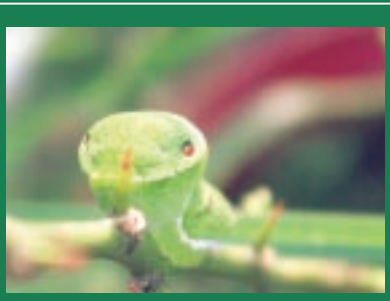





展示雙年報

【92-93年】

導言篇

通過物件、發現世界

作為一種文化機制，博物館對外呈現其自我的方式是展示和教育的詮釋與溝通動員，而蒐藏與研究為確認其存在的實體。我們從展示與教育實踐，探測博物館蒐藏與研究的深度與廣度。要追求獨特的博物館學的成就、要實踐文化關懷，蒐藏品及其所內涵的行為與社會性無疑是最重要的基礎。

不論是常設展或臨時性的特展，一個吸引人的博物館展示，往往是通過其特殊的收藏品來建構的。凝聚的、被凍結的、結構化的、去脈絡化的博物館收藏品，卻往往被用來發現動態的世界。

博物館的展示可以分為特展與常設展兩種類型，二者雖然性質有異卻又是互補的。博物館的常設展呈現其自我認同，標誌一座博物館基本的任務、方向、蒐藏研究興趣，由一群任務導向的館員細心的照護。常設展論述的是自然與人文知識中的一些定論，由穩定的組織與資源維持。

相對於特展，常設展是長時間存在且靜態的，特展則探索知識中的可能面向、由暫時性的組織與資源來建構，是較為動態的。特展的原形是：某些人、在有限的時間與空間、意識性的陳列某些物件。持續的推出吸引人的特展，是所有博物館經營的重任；特展的性質趨向於社會中的儀式現象，具有多面向的功能。

首先，許多特展持續的推銷館藏，藉以彌補鉅量館藏不見天日的缺憾，這是一座博物館的基本責任。以館藏物件為基礎的展示，源源不絕的書寫一座博物館的豐富，這種傳統意義之下的特展，大致是以館方的立場出發，是描述性的，也是灌輸的，展示內容具有權威性質。與此類似的，特展可以是新的學術、藝術創作的發表，通過特展挑戰過去的發現、發表藝術家的創造力，支持一個特定社會中的理性與想像存在的基本價值。

近代以來，特展被期待為一種動態的「論壇」，展示論述偏向「評論」、「批判」的文類，具有主動的迎向社會議題、關照不同主體的特徵，特展成為博物館參與社會文化實踐的一部分。這種特展形式強調詮釋的主體觀點、採取嶄新的展示手法，且使族群、前衛、實驗藝術的領域者增加提出新觀念的可能性。

特展也常與文化產業相連接，其目的在於將某種商品推銷出去，特展因此捲入市場體系，展示公司、策展人、展示製作、展示設備、媒體經營者成為互相連結的系統。由於特展可以吸引大量參觀者，便被視為一種生財的機制。一項獨特精采的特展也的確可以成為開拓財源的管道。但是近幾年來，幾個國家博物館「超級大展」(blockbuster) 的現身，卻預示了臺灣的博物館經營朝向市場理性的途徑。促銷既由手段轉變為目的，大眾媒體對展示的操控便不可避免。一旦博物館的經營者陷入將展示以市場需求的假設來定

位，其商品化終將危害其自身的生存環境。至少，在資本主義體系中博物館的存在價值將被邊緣化。

很顯然的，展示既可以為博物館的發展披荊斬棘，也有可能違反促成科學與文化發展的基本價值；既可以是著重主體詮釋的，也可能因壟斷與排他而稀釋文化民主的需求。當代的博物館必須衍生出一些新的關懷、開發新的展示途徑，以及時常保持如何讓觀眾真正的理解展示的警覺。

2003 與 2004，豐收的兩年，國立自然科學博物館展示組站在自然史與文化史的「演化」、「分類」、「生態」等角度，進行詮釋與溝通的工作，省思本館建館目標、持續的反映社會的需要，敏銳的維護展場與展品，通過蒐藏品，發現世界、促進社會大眾的科學與文化理解能力。以自然史與文化史為標的的博物館展示行動，反映科學與社會文化的生命脈動，是文化創意產業的基地。

展示掠影之2003年篇

尋羊遊戲—羊年特展

92.1.10~92.4.13

橢圓形廣場之內外廊道

約在西元前6000年，山羊與野牛、藏牛在同一時期被人類馴養。當時的動物既是神也是奴，作為神，牠們是豐饒旺盛的象徵，作為奴則寬容地厚養人類的食衣住行。中國人是何時發展出十二生肖的文化不可考，但「羊」早已名列華文世界中吉祥瑞獸之列。本特展由協辦單位農委會畜產試驗所恆春分所提供本土的臺灣黑山羊作為活體展示的主角，並在戶內外的廊道空間推出遊戲、趣味和知識為主的羊主題展示(包括協辦單位臺北市立動物園提供的十數種草食動物的頭骨和蹄骨標本等)；分別從羊的傳說（文化羊）、童話故事（童話羊）、形態分類和生態習性（生存羊）、羊的產製品（消費羊）等內容角度切入，作為慶祝新年的特展。

■尋羊遊戲—羊年特展

大王魷魚展

92.3~

地球環境廳一樓

■大王魷魚展

本特展前後規劃了三年，這隻聖保羅大王魷魚(Architeuthis sanctipauli) (Velain 1877) 可說是全世界採立姿展示最大的一隻，困難度也最高，底座、壓克力箱加上福馬林浸泡液的總重達 4 噸。可以三面仰觀，更可清楚觀看到牠吸盤上的環形利齒及噴水推進的大漏斗（出水口）。

聖保羅大王魷魚的分類地位屬於軟體動物門，頭足綱，槍形目，大王魷魚科。牠的體長 8.84 公尺，重達 240 公斤，由紐西蘭國立水文及大氣研究所在紐西蘭海域捕獲，贈予本館。牠的眼睛非常發達，以魚類及其他頭足類為食，常會同類相殘。大王魷魚的天敵是抹香鯨，抹香鯨會下沉至大王魷魚的棲地獵殺牠們。科學家在抹香鯨的胃中發現許多大王魷魚的喙，證實牠們是抹香鯨的重要食物。大王魷魚的生活史仍是一個謎，每年 12 到 3 月會出現在紐西蘭海域，於較淺處進行生殖，4 月之後便消失無蹤，可能具洄游性，但產卵地及其他生活史則一無所知。

■大王魷魚展解說活動

藍天紅土──北美西南印地安文化特展

92.1.24~92.6.15

第一特展室

本特展共展出343件北美西南原住民具有傳統及代表性的標本。其中有兩個造型一樣、圖案相似，但是製作時間相隔千年的湯勺，可以看出西南印地安文化的傳統與變革。其他的特展展品還包括傳統的日用品，像是陶器、編籃器、手織毛毯，以及皮製衣物。除此之外，還有西南印地安人依據傳統宗教信仰而創造出的講古陶偶、卡其納木偶和民俗工藝品等。

■編甕

■戶外廣場重建的傳統印地安泥磚造房屋

■藍天紅土──北美西南印地安文化特展

■頂陶老婦

卡其納是荷比族傳統信仰中的神靈，這些為數兩三百種的卡其納神靈，各有其獨特的功能。本館另特別製作了納瓦侯族的傳統「侯崗」和一九五〇年代的印地安交易站的實景模型，以及用圖片與模型造出的阿帕契族少女成年禮、荷比族婚禮、納瓦侯族派雅提宗教儀式、普布羅族傳統宗教舞蹈，和二十世紀初西南鐵路月臺上印地安小販的景象。並在本館戶外廣場重建傳統印地安的泥磚造房屋及帳篷。

■有紅心鹿與鸚鵡的多彩陶罐

飛旋、花紋、熱帶斑──臺灣東岸的海豚朋友攝影展

92.4.1~92.7.30

第三特展室

臺灣沿海長久以來一直存在著鯨與海豚，大多數人卻不知曉，鯨豚類動物事實上屬於溫血哺乳類動物，特性與魚類迥異，跟人類倒還較為近似。其幼年期較長，一般要到 6 歲以上才屆成年可以繁殖，一胎一仔，平均哺乳期約1年，每隔2~3年才生殖一次，繁衍的速度很慢；牠們是以頭頂的鼻孔直接呼吸空氣，因此在水中也有溺斃的危險；牠們適應了海洋生活，皮下脂肪層相當厚，禦寒效果奇佳，但環境溫度升高時會很快有過熱的問題；而許多海豚是群體生活形影不離的，這種種的特性，使得鯨豚類動物遭受不良環境威脅時，大舉滅種的危機非常高。目前所有的鯨豚，不論種類均列為國際間的保育動物。

臺灣的鯨豚調查研究遲至 1990 年初展開，近幾年來海上調查及賞鯨豚活動興起，學術單位及民間公益團體等之第一手的本土海中野生鯨豚的目擊影像材料逐漸累積增多。因此，本館主動邀集以黑潮海洋文教基金會的蒐藏影像為主的影像資料，配合觀察者親身的印象，向社會大眾介紹臺灣東部海岸最常見的鯨豚種類的模樣與個性。

■飛旋、花紋、熱帶斑──臺灣東岸的海豚朋友攝影展

森林生態影像展

92.2.21~92.3.9

第三特展室

展示項目為 91 年臺灣森林生態攝影比賽得獎作品共 60 幅及森林百景網路百景得獎作品，以大幅輸出、集錦方式呈現。展示方法：(一)展示作品：平面攝影展 60 幅，大小幅約 22×26 吋，以訂製展示框架懸掛。(二)大型輸出：森林百景大型輸出，長寬約 750×122 吋。以不同的影像媒體呈現臺灣森林生態多樣性，透過影像的真善美特性，激發全民參與生態保育、關心綠色臺灣。

聖母峰特展

92.4.21~92.9.7

陽光走道

■聖母峰──兩代情影像展

1953 年 5 月 29 日，紐西蘭人愛德蒙．希拉瑞和雪巴人丹增．諾杰創下人類史上第一次攀登第一高峰──聖母峰的紀錄。為紀念人類首次登上聖母峰頂 50 週年，本館與國家地理頻道推出本特展，展出來自國家地理頻道的精彩圖板與影像資料，本館太空劇場並於 4 月 22 日至 5 月 6 日配合放映「偉哉聖母峰」影片。

世界的臉譜──全球族群影像展

92.1.24~92.3.23

西屯路廣場

此特展為本館與國家地理雜誌（中文版）合辦之展示，共展出 57 幅攝影作品、10 幅地圖，並包括動靜態展示兼具的科學教育巡迴展示車。展示廣場豎立著數面巨型的靜態攝影，呈現的人物肖像充滿艷麗的色彩與豐富的表情，形成令人側目的視覺景觀。

■世界的臉譜──全球族群影像展

■科學教育巡迴展示車

SARS特展

92.5.16~92.11.16

生命科學廳戶外

SARS（嚴重急性呼吸道症候群）所引起的疫情震撼全球，但在跨國科學家的努力下，加快了我們對此一新變種冠狀病毒的了解。因此本館推出「看不見的敵人──SARS病毒特展」，以提昇大眾對病毒有更深一層的了解。根據科學家的研究，目前這波SARS的罪魁禍首，大多指向一種新變種的冠狀病毒，它可能是來自禽類冠狀病毒的新變種。科學家已完成新變種冠狀病毒的基因定序工作，它們自成一類，而且不同感染區的SARS病毒序列也有所不同。因此，世界衛生組織頗擔心SARS病毒的行為模式可能因此而有些不同。本特展為一戶外展示，並同時播放一部由英國製作的紀錄片，內容是回顧整個SARS疫情的發展。展出地點除了在本館的生命科學廳入口處之外，也在臺北市政府、臺灣博物館、國父紀念館及國立科學工藝博物館展出。

發現 DNA 五十週年

92.6.12~92.8.10

鳥瞰劇場前面廣場

92 年 4 月 25 日，剛好就是 DNA 結構被發現的五十週年。隨後由此延伸的遺傳工程，一直到今天的生物技術及其相關產業，均是各國繼資訊工業後的發展重點。因此本館與英國文化協會合辦「發現 DNA 五十週年」特展，以回顧這段二十世紀人類知識的重大發現。

特展首先回顧發現 DNA 結構的關鍵性人物，也讓大家了解過程中人的因素，畢竟科學家也是人。其他的展示內容還包括了各種主要的生物科技的介紹，如近年來已家喻戶曉的 DNA 指紋技術以及「動物複製」技術。我們會憂慮這種技術有一天被用來複製人類，然而你可以從本特展了解這完全不是原科學家的用意，這只是眾多科技進步對社會產生的影響之一。為配合本特展，本館亦推出「分子模型動手做」之科教活動。

■發現 DNA五十週年特展

野生動物攝影展

92.7.9~92.11.16

西屯路廣場

此特展為本館與國家地理雜誌（中文版）聯合推出，展出的作品共有42件，均為世界級攝影大師之大作。本特展除了呈現野生動物的美與妙之外，還介紹野生動物所處的南北極、沙漠與疏林、熱帶雨林、溫帶地區生態的危機問題。為了讓民眾了解攝影的基本原理和國家地理雜誌世界級攝影師的拍攝秘訣，在特展中也有攝影基礎的介紹，與國家地理雜誌攝影師拍攝動物、人物、風景等主題的拍攝技巧。為鼓勵小朋友能用心觀察與記錄生活周遭環境的動植物，並將他們觀察的影像及感言與大眾分享，在特展中亦規劃有「兒童眼中的生物」攝影徵件活動。

■野生動物攝影展一景

■野生動物攝影展

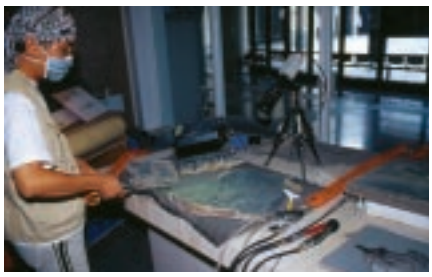
魚龍化石清修展

92.6.12~92.9.30

陽光走道

本館92年於德國司圖加特地區私人化石博物館取得一批珍貴的原始岩版標本，經與地質學組、展示組、科學教育組與典藏管理組共同籌劃展開修復展演活動，並經石尚礦物化石博物館技術奧援，進行為期三個多月的修復工程。該件魚龍標本封存於岩版中，有待科學家解碼其奧秘，了解它的獨特性及重要性。

展品包括：(一)魚龍。(二)中生代海棲爬行動物。(三)中國貴州龍動物群，包括魚龍、海蜥、楯齒龍、幻龍、蛇頸龍、腫肋龍等，絕大多數標本均有待修復命名。藉由珍稀、豐富的收藏物件，進行深入的研究，讓億萬年前悠遊於汪洋的魚龍重新活化，自岩石中修復、浮現。



■海龍計畫—魚龍化石清修展演活動

不會飛的鳥

92.7.1~93.1.10

第一特展室

不會飛的鳥分布在南半球。牠們體型高大，胸骨無突起，翼骨退化，飛羽不發達，無羽鉤連結，尾羽短，無尾骨腺，羽毛缺油脂。這些先天條件皆不利飛行，但牠們雙腳粗壯有力，可快速奔跑。除非環境突變，牠們定居某一棲息地。食火雞及幾維鳥單獨或成對棲息於熱帶或亞熱帶雨林，其餘則群居於開闊草原、半乾旱地區或稀疏灌木林地。牠們雜食，視覺、聽覺敏銳，夜出性的幾維鳥則視覺退化，嗅覺、聽覺靈敏。不會飛的鳥婚配情形混亂，鴕鳥和美洲鴕鳥一夫多妻，鴯鶓和食火雞一妻多夫，幾維鳥一夫一妻。牠們的蛋很大，孵化期約 7~8 週，雛鳥 5~6 個月後可獨立生活，18 個月後外型像成鳥，2~3 歲性成熟。人類自古就懂得利用這些不會飛的鳥，但凡肉、蛋、皮、蛋殼、羽毛、脂肪、腿骨，甚至腳爪都派上用場。

不會飛的鳥類展包括：(一)鴕鳥、美洲鴕鳥、鴯鶓、食火雞、幾維鳥的立姿毛皮標本和骨架標本。(二)不會飛的鳥類飛不起來的原因，由骨骼、羽毛結構、無龍骨凸起等原因探討。(三)鳥蛋與體重的比較。(四)鴕鳥的附加使用價值。(五)電腦益智互動節目。

■不會飛的鳥特展展場

■不會飛的鳥特展戶外展示區

■小鴕鳥破殼而出

未來狂想曲

92.7.1~92.11.30

第二特展室

本館與Discovery channel合作推出《未來狂想曲》特展。想像一下，500萬年後的地球會是什麼樣子？地球上的生物會變成什麼樣子？《未來狂想曲》以革命性的角度觀看演化史，讓觀眾能描繪數百萬年後地球的面貌——人類屆時已經離開散居在太陽系的各個行星，地球只剩下難以想像的植物與動物型態。在本特展中，觀眾將會看到預測中 500 萬年、1 億年與 2 億年後的世界，探索未來地球動植物特殊的改變。這些立論確鑿的臆測將解釋影響演化發展的環境與遺傳因素，例如比大象還大的陸生魷魚以及陸龜；天上飛的是魚演化來的翼飛魚；海裡游的是潛到海中謀生的海鳥，只是牠們會回到陸地上來產卵繁殖。以後的銀蜘蛛會畜養小型哺乳動物當食物，就像現在的人類畜養牲畜一樣。這些都是科學家的奇妙狂想，也許很多人會認為荒誕不經，在現場的節目中，將會介紹這些科學家是根據什麼理由去想像這樣的生物以及生活形態。你可以認同這些科學家的狂想，也可以提出不同的看法與推測。

■未來狂想曲特展一隅

■未來狂想曲特展入口

■未來狂想曲——巨龜

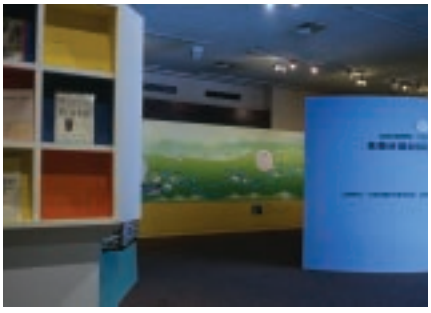
科學週——全民科學教育活動之「永續臺灣的挑戰～河川與海洋」

92.8.22~92.12.22

第三特展室

國科會為推廣科學教育，以促進社會大眾了解科學發展及其中的意涵，每年均舉辦科學週展示活動，92年以「臺灣的河川與海洋」為題，介紹永續發展的概念。1992年在巴西舉行的「地球高峰會議」，提出解決環境污染、自然資源耗盡、生物多樣性的消失、貧富不均及飢餓等問題，其核心就是永續發展，也就是在環境不繼續惡化之下，改善人們的生活品質；不過經過11年的努力，似乎離原來的目標還有相當大的距離。

在這次的展示當中，本館以貫穿臺中縣的大甲溪為主軸，試圖透過四個不同的故事來介紹永續發展的概念。首先是介紹大甲溪上游的臺灣櫻花鉤吻鮭，說明保存生物多樣性的重要性。其次是德基水庫的介紹，說明不當的集水區管理對水資源造成的影響。接下來是探討建蓋水力發電廠的優劣分析。最後是大甲溪出口南邊的高美溼地，說明溼地對生態及保護海岸線的重要性。特展期間，也將有解說服務、演講活動及親訪高美溼地，觀賞各種水鳥、螃蟹等戶外活動的配合。



■2003年科學週展場

■ 特展名稱：慾望天堂—寶石特展
■ 展出日期：92.10.10~93.3.31
■ 展出地點：礦物廳＆環境劇場

本館為了拉近各種層面的觀眾族群與博物館的關係，共享館內外的寶石知識資源，特別策劃了一項別開生面的「寶石特展」，總共展出 20 類主要無機寶石及其他十多種罕見無機寶石和有機寶石，每類寶石原則上從原礦(含有母岩或圍岩)、毛料(尚未切磨、拋光的寶石晶體或礦物)、裸石(已切磨、拋光的寶石)到珠寶首飾系列介紹。原有的環境劇場為了這項特展必須停演半年，但是為了充分運用劇場的特性，展示空間內特製的媒體節目會有環場演出，取代原有的環境劇場節目。展品總計三百五十多件，除了館藏的原礦標本和少許裸石、人類學的古玉器物，還向國立故宮博物院借來一把足以彰顯寶石魔力的鑲寶石降魔寶刀，這是清宮中取之為文殊菩薩化身之威羅瓦金剛的手持物，以及一組皇家貴族的首飾。另外，獲得頂康珠寶的梁繼昌和康玲紋賢伉儷慷慨借展數百件寶石原礦、裸石及首飾，提供本展更完整的展品內容。並向一些熱心博物館公益的個人蒐藏家們借展，包括數十件四千多年前的新石器時代的綠松石和古玉等各種材質的古代佩飾物；以及每個月推出特殊主題精品秀的珠寶首飾。

■寶石特展展區

■寶石特展

■ 特展名稱：掠食者特展
■ 展出日期：92.10.3~93.2.8
■ 展出地點：第一特展室

■掠食者特展展場一景

本特展帶領觀眾進入大自然中掠食者與被捕者間不斷掙扎求生存的世界。主要展品是7件由日本進口的大型油壓控制電動動物模型，包括一條4公尺長的大白鯊、一隻3公尺長的變色龍，當伸出舌頭模擬捕捉獵物時，總長度可達6公尺！另外還有一隻2公尺的大蜘蛛，露出牠的大毒牙，相當驚人。至於另一隻大蟒蛇則靠著其力大無比的力氣，活活勒死一隻大鱷魚，展現了各種掠食者採用不同的捕殺策略。除了這些大家比較熟悉的現生動物外，還有兩隻活躍於一億多年前的奔龍，正在享用牠們的食物──原角龍。在這些動物模型之外，本特展也將搭配十分豐富的館藏標本。在「掠食者的基本配備」展示主題中，您將會看到一個160公分高的古代鯊魚嘴巴，口裡的三排牙齒足足有120顆之多。展場另一角落，可以看到終極陸棲掠食者的代表──劍齒虎的復原骨架等。

■掠食者特展──奔龍

■掠食者特展──大白鯊

■掠食者特展──大蟒蛇

清修室展演活動──剪出神妙．黏出莊嚴

92.10.1~92.12.31

陽光走道

「剪黏」又稱「剪花」，將各種「剪」裁成形的玻璃片「黏」於灰泥的表面。剪黏是建築裝飾的一種民間工藝，原產於閩粵地區，二百多年前隨著先民拓墾，落腳臺灣發展。早期的作品多半使用瓷片，後來因彩色玻璃普遍使用於日常生活，剪黏匠師引用此一材質於剪黏裝修上；然而玻璃片經不起夏日的日曬與雨淋，於民國七〇年代左右，許多寺廟又改回原來的瓷片。

這批剪黏由鄭盛宏與鄭盛臺兩兄弟製作，鄭氏兄弟擅長剪黏、交趾陶製作，剪黏部分師承洪坤福系；交趾陶部分學於嘉義林添木，師承葉王系，目前臺灣具有代表性的兩大剪黏匠師流派分別為道光至光緒年間的葉王系與1910年來臺的洪坤福系。葉王系多半製作交趾陶為主，作品以柔美著稱；洪坤福系以剪黏作品居多，作品多呈現雄偉的氣勢。因此作品承襲兩系的精隨，自成一格卓然成家。透過此特展讓觀眾更了解寺廟建築及建築裝修之藝術。

■清修室展演活動──剪出神妙．黏出莊嚴

裝扮旱溪媽祖的家──剪黏裝修藝術

92.11.4~93.5.23

陽光走道

樂成宮座落於臺中市東區，為國家三級古蹟之一，清乾隆年間的建築。屋頂上的剪黏為民國 72 年改建時裝上的，是以彩色亮麗的玻璃來製作，當時臺灣社會經濟富裕，流行大型的剪黏來裝修廟宇，顯示香火興盛。九二一地震時廟宇受損，部分原因來自於屋頂的剪黏過重，92 年 3 月完成發包開始整修。另一方面樂成宮也打算恢復為民國初年時的建築，因此這批剪黏不擬再安放回原處，為了永久保存具有歷史意義的剪黏，樂成宮將十五座精品捐贈給科博館蒐藏。借此展示讓民眾了解臺中市早期開發史、旱溪媽祖廟在臺中早期開發所占的地位、寺廟沿革及在當地所發揮的功能，更能了解傳統建築及裝修之藝術。

■剪黏裝修藝術特展展品

■裝扮旱溪媽祖的家──剪黏裝修藝術特展

■樂成宮外觀

尋訪時間膠囊──看化石說身世

92.11.6~93.7.1

蒐藏秘室外迴廊

本展示展出內容包括：(一)志留紀晚期至泥盆紀早期群生海百合化石。(二)三疊紀中期珍稀奇幻的水生爬行動物──幻龍。(三)三疊紀中期海洋中神奇的棘皮動物──海百合化石。這三件標本是從 2002 年的德國慕尼黑礦物化石展購回的精品，一件產自摩洛哥的古生代地層，另外兩件則產於中國的中生代地層。來自不同的時空，有著不同的身世，卻難能得在幾億年後並列於此，讓我們探訪。

■探訪時間膠囊特展

失落的史前惠來人──重現科博館特展

92.11.27~94.1

生命科學廳大廳

■惠來人男童遺骸

臺中市惠來里遺址自 92 年 9 月 30 日出土一具距今1300年前的男童遺骸並經全國電子、平面媒體報導之後，其曝光率之高絕對不比在此遺址附近建古根漢美術館的新聞遜色。為了讓觀眾能親睹其廬山真面目，本館特別趕工翻模剝製了一具長達4公尺的地層剖面，並標示男童遺骸、陪葬品、灰坑(垃圾堆)、陶片及石器出土的位置。另外，並請劉淼川先生利用地面遙控小飛機空拍，鳥瞰惠來里遺址的範圍，並標示未來第七重劃區新市政中心、市議會及國家音樂廳的預定地區位。

這個「小而美」的特展圍繞著「發現惠來里遺址」、「深挖地下文化資產」、「出土史前文物」、「小心！遺址就在你身邊」四大展示主題，來彰顯惠來里遺址的發現對臺中市的早期開發史研究以及保存地下文化資產的重要意義。

■失落的史前惠來人──重現科博館特展

科學與魔術系列(一)──眼見未必為憑

92.12.25~93.6.22

本館第二特展室

本特展的目的在於：(一)透過操作魔術道具的過程，傳遞魔術背後隱藏的幻覺科學知識。(二)透過錯覺展品的展出，讓觀眾感到這些展品居然能欺騙其眼睛，引發其探索視覺科學的興趣。(三)利用可提供觀眾多種視覺經驗的圖像，吸引觀眾來了解這些圖像背後的製作方式或科學依據。

在本特展中，觀眾會進入一個營造事實真相未必符合親眼所見的「錯覺房」。在房內，觀眾可參觀許多與大小、長短、遠近錯覺有關的展品，並且可將方形放到變形窗戶中，使其看起來像變了形的樣子。經常會讓我們想不透的魔術幻象道具，也是展出重點。在展覽中，觀眾可以有如魔術師般地操弄道具，將人的身體變不見或者將東西由輕變重，甚至還可以使用斷頭臺的道具，進行十分嚇人的演出。提供不同於一般美術館看畫的經驗亦是本特展的一大特色，在不一樣的畫廊中，觀眾可以在許多圖畫的走廊裡，將圖上下顛倒看或者上下左右轉著看，甚至還可以自己組圖來看或找圖來看。

■眼見未必為憑特展

展示掠影之2004年篇

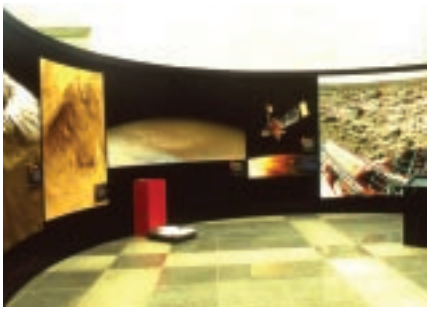
火星大探險特展

93.1.2~93.4.30

立體劇場廊廳

本特展的資料由國家地理頻道提供，展示的規劃與設計由本館執行。這次的操作模式讓在本館的展示與全球其他地區相同主題的展示，雖有著相同的展示文稿，所提供的參觀經驗絕對與民眾在網路或書本上所看到的火星影像有所不同。在此展示中，所有火星圖像均放大到觀眾可以看清楚其細部形貌的狀態，讓進入展區的民眾在參觀時有如享受火星圖像的視覺饗宴。

本特展的另一個特色是民眾可以透過互動式展品與活動，親自了解火星的基本常識。例如，從宇宙磅秤的展品，觀眾可以了解火星引力所造成其體重減輕的程度；從只有1公分的地球須走多遠才能到達火星的參觀活動，參觀民眾可以了解地球與火星間的距離關係。本特展於展示期間並陸續加入美國太空總署漫遊車探測火星的最新資料。



■NASA火星特展

從空中看地球──空中攝影藝術展

93.2.5~93.4.18

博館路廣場及演化步道

展出的 150 幅作品由世界知名的空中攝影師楊亞祖貝童(Yamn Arthus-Bertrand) 所拍攝，反映出多樣化的自然生態，攝影師希望能透過這些作品的影像來喚醒大家，大自然是無法長期負荷人類目前對它毫無忌憚的索求方式。

「從空中看地球──空中攝影藝術特展」在本館演化步道與博館路廣場前展出。展出 150 幅攝影作品，是楊亞祖貝童從 1990 年起空中拍攝大地的萬張作品中挑選出來的。這些作品能讓我們看到地球上大地的多樣面貌，還能激發我們對共同生活的大地的情感。這些作品在不同時段的光線下，甚且能呈現出不同風貌與觸發觀者不同的感受，在 2 月 5 日開展後，即吸引許許多多觀眾駐足觀賞。

■從空中看地球──空中攝影藝術展

■觀眾觀賞「從空中看地球──空中攝影藝術展」

■蝶舞．楓紅．話苗年特展一隅

■蝶舞．楓紅．話苗年特展活動

蝶舞．楓紅．話苗年特展

93.1.17~93.7.4

第三特展室

苗家古歌曾述及：遠古時候，蝴蝶在楓樹心裡產下了12枚卵，分別孵化出獅、牛、蝶等等動物以及人類的祖先姜央，從那以後才有了苗族。蝴蝶媽媽的故事一直是苗的各個支系在服飾表現上的一個重要母題。蝴蝶媽媽帶領著苗走過幾個世紀，到現今仍為苗文化重要的表徵。在苗文化中，除了蝴蝶的紋樣，龍以及雉雞的紋樣也是常見的。龍在苗文化中具有各種化身，蠶龍、魚龍、螃蟹龍等，龍為農業之神的化身，也是主掌苗家生計的泉源。雉雞在苗家為溝通祖靈與人間的媒介，也是初始的象徵，在服飾以及各種儀式中皆可見到雉雞的蹤影。

苗對於多數的人來說是那樣的陌生，苗與漢之間的歷史糾葛是那樣的深；透過本次西江苗家過年的介紹，一同進入苗家庄，探訪這支位於高原仙境中的族群。

化腐朽為永恆──動物標本製作展演

93.2.20~93.8.30

可見館藏室

自然史標本的蒐藏在博物館業務中為相當重要的一部分，蒐藏標本的目的除了在於保存與維護代表自然歷史的標本，同時提供全世界的科學家來利用這些標本進行研究和解釋自然歷史，最後再透過各種展示與科學教育活動，如刊物的出版和演講等方式將標本和研究成果與大眾分享。本館自民國72年起，即開始蒐藏各類自然史標本，其中動物標本就占了所有蒐藏標本的 63.4 %，為本館標本蒐藏之最大宗。近年來，館藏之動物標本不但已提供相當多國內外學者進行研究，同時在相關展示與科學教育活動中也立下不少汗馬功勞。

動物標本的本身代表過去生物多樣性的證據和各種研究的基礎，但如何將標本永久保存與長期維護，同時能提供學者研究使用，卻是一門大學問。本館自 93 年 2 月 20 日起，即由本館動物標本製作人員親自於陽光服務臺對面展示櫥窗內製作標本，並帶領觀眾瞭解如何將昆蟲、鳥類、小型哺乳類和貝類、螃蟹及棘皮動物等屍體，經過繁複的步驟轉變成永久保存之研究用標本。

■化腐朽為永恆──動物標本製作展演

特展名稱：兒童眼中的生物影像展

展出日期：93.2.27~93.5.23

展出地點：第一特展室

為鼓勵小朋友用心觀察與記錄他們生活周遭的動植物，本館與國家地理雜誌於 92 年辦理「兒童眼中的生物」攝影徵件活動。這個活動共選出觀察、記錄與創意等3大項各100名小朋友的作品，本館將這些多角度觀察方式與豐富想像力的作品，以不同於一般畫廊的創意展示方式呈現在觀眾的眼前。

■兒童眼中的生物影像展展區

■兒童眼中的生物影像展頒獎典禮

■兒童眼中的生物影像展作品

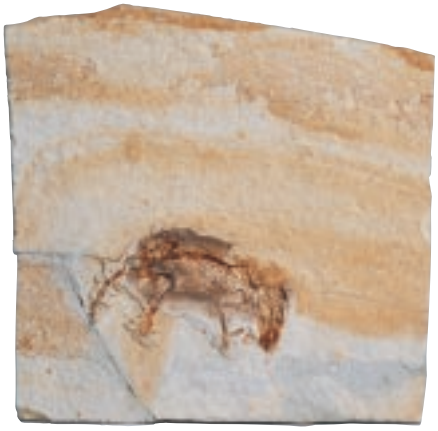
■千禧中國鳥龍復原圖

飛天恐龍──溯源之謎大解碼

93.2.26~93.5.2

第四特展室

■飛天恐龍特展入口



■攀援始祖獸

本特展展出過去十年來在中國東北遼寧省發現的珍貴化石標本，其中很多標本是第一次在中國大陸以外的地區展出，包括最早的開花植物「中華古果」、「遼寧古果」等多種植物化石標本，這些標本清楚地保存了早期開花植物的生殖器官；或許我們會很驚訝的發現開花植物的祖先可能是一種生長在水中的草本植物。

在龍和鳥的「失落環節」化石標本方面，則包括披著羽毛的奔龍、孔子鳥、尾羽龍、中國鳥龍、四翼龍等多種化石標本，這些標本的發現在研究恐龍與鳥的演化都是十分的重要。此外，本特展還會同時展示同屬「熱河生物群」的其他魚類、兩棲類及爬行類的化石標本。除了展出各種難得一見從中國大陸遠來的珍貴化石標本外，也配合本館古生物學門和動物學門的多種館藏標本，以使整個展示故事線的發展更為完整。此外，各類多媒體展示也不缺席。

■「飛天恐龍──溯源之謎大解碼」特展一隅

苗家吊腳樓

93.4.9~

橢圓形廣場中庭

吊腳樓是苗人傳統民居建築，盛行於貴州、湖南、川東等的苗族山區。吊腳樓最底一層用於牛欄、豬圈、雞舍、堆肥、放柴等；中間一層為人居住，是三進式的格局，正中間為堂屋，設祖先牌位，家庭祭祖、宴飲、接客多在此舉行，堂屋兩邊的兩大間則按需要隔成睡房、客房、烤火間、存物間、通道等；頂樓為閣樓，存放穀子以及用來曬衣。該建築原本是修建在斜坡上，這種位在斜坡的房子，修建時先挖出一個上下兩級梯形的平臺，梯級堡坎用鵝卵石砌成堅固的保護。有了這約一百平方公尺的兩級平臺，整幢房子的支撐立柱便安放在上面。從側面看，最外面的一根柱子懸空而掛，同上面一級屋基持平形成了「吊腳」，俗稱「吊腳樓」因而得名。

本館展出的吊腳樓，來自貴州錦屏縣平略鎮彰化寨，臨清水江邊，屬歇山式穿斗挑梁木架干欄樓房，屋齡大約三十多年，分為 3 層，總坪數約 85 坪。

金字塔探祕──羅浮宮埃及文物展

93.4.23~93.7.18

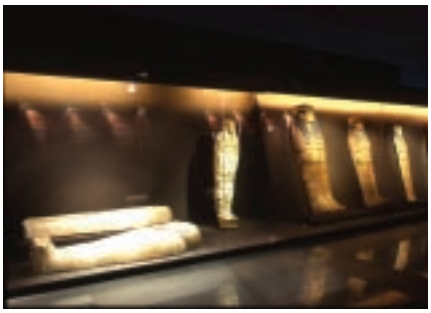
立體劇場前廳及四期B1之礦物展示區與環境劇場

歷經四年的籌劃，在聯合報系及九觀文化的努力下，羅浮宮埃及館的收藏來臺巡迴展出一年。

這個為臺灣民眾量身打造的展覽，匯集了羅浮宮埃及館 600 件以上之重量級收藏品，其中包括 21 王朝統掌書記大丞的高級官員，同時也是廟宇祭司名為蘇提美斯的5件式彩繪套棺；一件埃及古文明晚期大理石石棺、兩隻人面獅身像，還有亡者隨身必帶的「亡者之書」、動物俑數尊，以及帶棺木乃伊一尊、聖甲蟲、內臟罐以及上百件的陪葬俑等，精彩作品不一而足。本展將透過羅浮宮豐富之收藏，為臺灣民眾建構完整的古埃及文明史，以法老雕像與宮廷之文物展現埃及古文明之美，讓臺灣民眾可以跳脫書本上的知識，與真實的古物直接對話。

此外，承蒙臺大醫院以及羅浮宮埃及館

■羅浮宮埃及文物展展場一隅



的大力支持，此次來臺展出的少女木乃伊及數件動物木乃伊，透過臺灣醫學界的先進儀器與專業協助，為羅浮宮木乃伊解開其死因。這是臺灣醫學界首度與國際知名美術館攜手合作，而其檢驗結果也在臺中首度曝光，並與展品一同展出。

■中國龍鳥

▌「飛天恐龍」特展再現

▌93.5.21~93.9.26

▌第四特展室

本館繼 90 年的「千禧龍年—與龍共舞」特展之後，於 93 年 2 月至 5 月再次推出「飛天恐龍」特展。該特展結束後，從中國地質研究所借來的標本即安全送回北京。因這批珍貴原件標本全為石板標本，所以在規劃這次展覽過程中，本館也從地質學組、動物學組及植物學組拿出相當多的收藏充實整個展示。因此當原件標本送回中國地質研究所後，本館同仁共同討論「飛天恐龍」展的後續事宜時，達成的共識是對於這一個在科學研究上那麼重要的議題，又有那麼豐富展品的展示，就此結束的確有些可惜。於是本館再次與中國地質研究所討論在原件標本回去後，由該研究所提供高解析度的影像，替換原放置標本的位置，如此一來，「飛天恐龍」展又可以延續下去。觀眾或許沒有機會看到原件標本的精彩，但從知識及教育訊息層面來看，內容可一點也沒有縮水。由於這樣的展示方式是不再需要付「借展費」給中國地質研究所，因此該展是不另收費的。

■小盜龍

重新發現臺灣獼猴

93.6.4~94.2.27

陽光走道

臺灣獼猴是臺灣特有的靈長類動物，根據最新的估計資料顯示，野外臺灣獼猴族群至少尚存14萬隻，但除非是在山區居住或工作外，一般臺灣民衆並不易見得到猴蹤。

近10年來，臺灣獼猴被列入保育類動物受到保護，然隨之就有猴滿為患、必須控制的說法，這些以人為本的「野猴印象」均屬片面資訊，對於已在這片土地上繁衍上萬年的生物物種，實不公平。「重新發現臺灣獼猴」特展展出獼猴的生態標本與生態資料，介紹獼猴豐富的行為語言，討論臺灣獼猴的起源，並將透過一百多年前西方人的眼睛，揭露當時的獼猴習性與臺灣環境。本展覽另外將延伸帶領觀衆「抓猴」活動，導引對猿猴類有興趣的朋友進一步觀賞本館所有的猿猴展示。

跟著 TIPPI 遊世界攝影展

93.7.3~93.8.24

西屯路入口右側戶外廣場

本特展由 Discovery 動物星球頻道主辦，內容為Tippi的野生動物攝影精華內容，並且與臺中市政府合作辦理「尋找臺灣蒂皮」以及公車彩繪等活動。

■重新發現臺灣獼猴特展

科學動起來

93.6.9~94.3.31

第一特展室

「科學動起來」特展是由澳洲國立科技中心(Questacon)所設計的巡迴展之一。本館在澳大利亞商工辦事處的贊助之下，邀請 Questacon 提供「科學動起來」特展來臺展出，讓臺灣的民眾有機會欣賞澳洲科學教育的精華。

「科學動起來」是一個既有趣又具學習意義的特展。它將物理、數學、生物、環境等各種議題設計成互動式展品，讓觀眾可以「快樂的從做中學」。這個特展鼓勵教師和學生自己設計創作科學實驗和遊戲，並配合簡單活潑的說明面板和具有啓發性的教師手冊，讓觀眾可以隨著本身的科學背景調整學習的深度，讓這個展示的教學效果發揮得更淋漓盡致。

■「科學動起來」動手做活動

■科學動起來展區

土桑展—玩石蒐藏家的朝聖市集

93.7.21~94.1.9

蒐藏祕室外迴廊

每年 2 月的第一個禮拜，在美國亞歷桑那州西南方土桑市所舉行的“Tucson Gem, Mineral and Fossil Show”，是世界上最大型的珠寶、化石、礦物展。每年吸引超過十萬名來自世界各地的礦主、珠寶商人、岩礦蒐藏家、古生物學者及對地質標本有興趣的愛好者參與此一盛會。

科博館開館雖滿 20 年，與國外各大自然史博物館數百年的蒐藏歷史仍有一段差距，前往土桑可在較短時間內購得一些世界級精美地質標本。此次「土桑展—玩石蒐藏家的朝聖市集」，共展出 27 件精美礦物及一件大型化石標本，依展示主題分為5部分：(一)礦物的形狀：晶形 Crystal Form 與晶癖 Crystal Habit。(二)礦物的家：生長環境。(三)礦物的顏色。(四)螢光礦物。(五)三葉蟲化石標本。

■土桑展

■土桑展展品

穿越時空訪臺中──古早臺中人的故事

93.7.17~94.1.9

第二特展室

一般而言，大眾對臺中市的歷史刻板印象中認為臺中市最早是明朝時期開始。本館於民國93年6月15日開始進行臺中公園挖掘，發現臺中市東大墩的歷史至少有3500年，亦即商朝以前就有人住在這裡。此外本館民國91年7月1日開始進行惠來里遺址挖掘，發現至少有牛罵頭、營埔及番仔園三層文化的堆積，其中以17具番仔園時期俯身遺骸的出土，為臺中市內首次發現，具有重大的文化史意義。

「古早臺中人的故事」特展即以惠來里遺址出土的獸骨、種子等動、植物標本為主，主題分別包括：穿越時空訪臺中、臺中公園遺址、惠來里遺址群、考古有教室；再搭配

珍貴的古地圖、空照圖、老照片、考古紀錄片、電腦動畫、實景模型和陶罐拼裝組合遊戲，時空分布由近而遠，對瞭解臺中市的歷史及古代至今環境變遷具有特殊的自然史及文化史意義。

■古早臺中人的故事特展

2004年科學週──形的特展

93.7.24~93.12.13

第三特展室

國科會科教處為推廣科學教育，期望透過生動活潑的展示和活動，促進國民對科學的興趣與關切，促使全民了解數學、科學、技術科學，以提昇全民的科學素養，並帶領民眾認識「形」，進而培養其欣賞藝術的審美觀。

93 年科學週主題定為「形」，其內容含括人文藝術、自然科學和應用科技等方面。由本館李家維館長擔任策展總召集人，分別在臺北國立中正紀念堂、臺中國立自然科學博物館、高雄國立科學工藝博物館同時展出。

在自然科學與科技部分，本次特展主題內容有自然奇觀（含生物、地質、宇宙等）和人類科技發明（含交通、建築、超導科技，以及正多面體、地圖投影、透鏡等）。在展示方式上，我們將以形體的變化為主，於本館第三特展室中呈現奧妙的螺旋曲線、自然就是美、面面俱到、形的量度、天旋地轉、健康的形、猜猜我是誰、形的變變變、碎碎平安的形、如影隨形等 10 個自然科學主題，計 39 個展項。

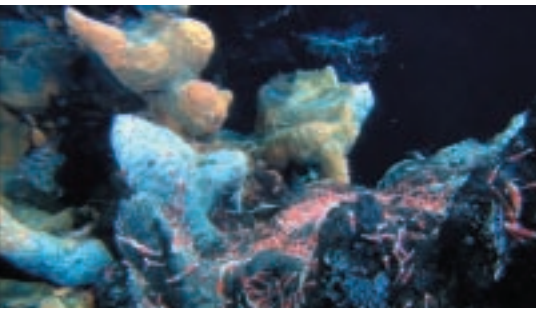
■2004年科學週──形的特展

深海火山特展

93.8.1~93.12.31

科學中心一樓大廳

近年來科學家在深海火山附近發現了一些奇特的生物，這些生物打破了以往生物學家對生命生存條件的認識。



■熱泉區豐富的生命，碗狀的岩塊表面長滿細菌，是紅色幼蝦的育嬰房。

■深海火山特展展區

植物標本製作與展演

93.9.7~

陽光走道

本館植物學組蒐藏傳統視為植物類群的生物，包括維管束植物（蕨類、裸子植物、被子植物）、苔蘚、藻類、地衣及真菌；又依不同的研究目的，採用臘葉、浸液、孢粉、切片、木材及種原保存的方式典藏。

在世界標本館索引中，科博館植物標本館代號為TNM，自民國72年成立以來，目前蒐藏已逾13萬號，透過良好的標本製作及管理，這些永續保存的典藏標本，提供對臺灣及東亞植物自然史有興趣的學者，挖掘出其所蘊藏的價值；並藉由展示及科教活動，我們亦將這些研究成果呈現給一般大眾。

唯有嚴謹的製作過程和完善的管理，才能賦予標本不朽的價值，看似簡單的標本製作，亦是相當重要的環節。本館植物學組標本製作人員於陽光服務臺對面展演室現場親自操作，引領觀眾認識臘葉、孢粉、切片、真菌、藻類與苔蘚標本，以及組織培養與種子保存之製作流程。

■植物標本製作與展演

異蟻份子──入侵紅火蟻特展

93.12.16~94.3.27

陽光走道

紅火蟻是目前全世界最危險的螞蟻，危害美國70年後，入侵澳洲，現也侵入了臺灣。面對看似簡單而很複雜的入侵紅火蟻問題，本館擔負起推廣教育的重責，特別邀請臺灣大學昆蟲系林宗岐博士，協助規劃入侵紅火蟻特展，希望藉此喚起全民同心協力、共同重視和解決入侵紅火蟻問題。

■異蟻份子──入侵紅火蟻特展

剎那的永恆──臺灣鳥類生活記實特展

93.10.29~94.4.30

中國科學廳及地球環境廳二樓廊道

鳥類是自然中可愛的精靈，牠們亮麗的羽色、多樣的體型、悅耳的鳴唱、自由的飛翔、繁殖的行為，以及一些怪異的動作，在在都能吸引人們的興趣。牠們多采多姿的生活裡，更潛藏著許多尚未被人知的趣事。鳥類攝影家隨著自己的興趣，走南闖北，上山出海，不計日夜地到處以鏡頭捕捉鳥兒的倩影，忠實地記錄各種鳥類的生活。

這次展出的鳥類影像共115幅，是由16位鳥類攝影家多年走遍臺灣、金門和馬祖等地所拍攝的精品。影像中含有豐富的鳥類知識，歸納為：(一)配對與築巢，(二)孵蛋與育雛，(三)照顧與成長，(四)覓食與食性，(五)洗澡與梳羽，(六)警戒與領域，(七)常規與意外，(八)鳥類與人類等8個主題與觀眾共享，並配合有演講和野外觀鳥活動。

■剎那的永恆──臺灣鳥類生活記實特展

上天下地看臺灣──臺灣土地故事影像特展

93.11.22~94.2.28

演化步道及博館路廣場

本展示以人文關懷為根基，以高科技的衛星影像及特殊視角的空拍攝影，帶領觀眾在此視覺影像下，用全新、多面向的角度來探索家園，認識我們的土地。展覽分成三大部分，第一部分：從太空看家園──臺灣全島衛星影像圖。第二部分：縱覽臺灣──臺灣八大主題展板：臺灣島嶼的形成、臺灣的生物多樣性、臺灣的自然棲地、臺灣的人口與族群、臺灣的人文史蹟、臺灣的產業、臺灣的衛星科技、臺灣的自然傷害。第三部分：俯瞰大地──122 幅臺灣空拍影像圖。

■上天下地看臺灣──臺灣土地故事影像特展展區

■上天下地看臺灣──臺灣土地故事影像特展展區

甲蟲緣．佐藤心──佐藤正孝教授昆蟲標本捐贈展

93.12.30~94.12.29

蒐藏秘室

日本學者佐藤正孝教授係國際知名之鞘翅目分類學者，曾發表五百餘篇研究報告以及相關甲蟲之圖鑑，其學術成就極受昆蟲學界之肯定，主要的研究採集與蒐藏為鞘翅目昆蟲，包括：扁泥蟲、螢火蟲、菊虎、牙蟲等類群約有廿萬件，足跡遍布了臺灣、泰國、寮國、大陸、日本等國。由於佐藤教授捐贈的標本均附上完整的採集資料，其中並包括稀有且珍貴的副模式標本，對於日後的昆蟲研究極富價值，本特展將展示部分捐贈的標本，並對佐藤教授致意。

■佐藤正孝教授來館訪問

■佐藤正孝教授捐贈之昆蟲標本

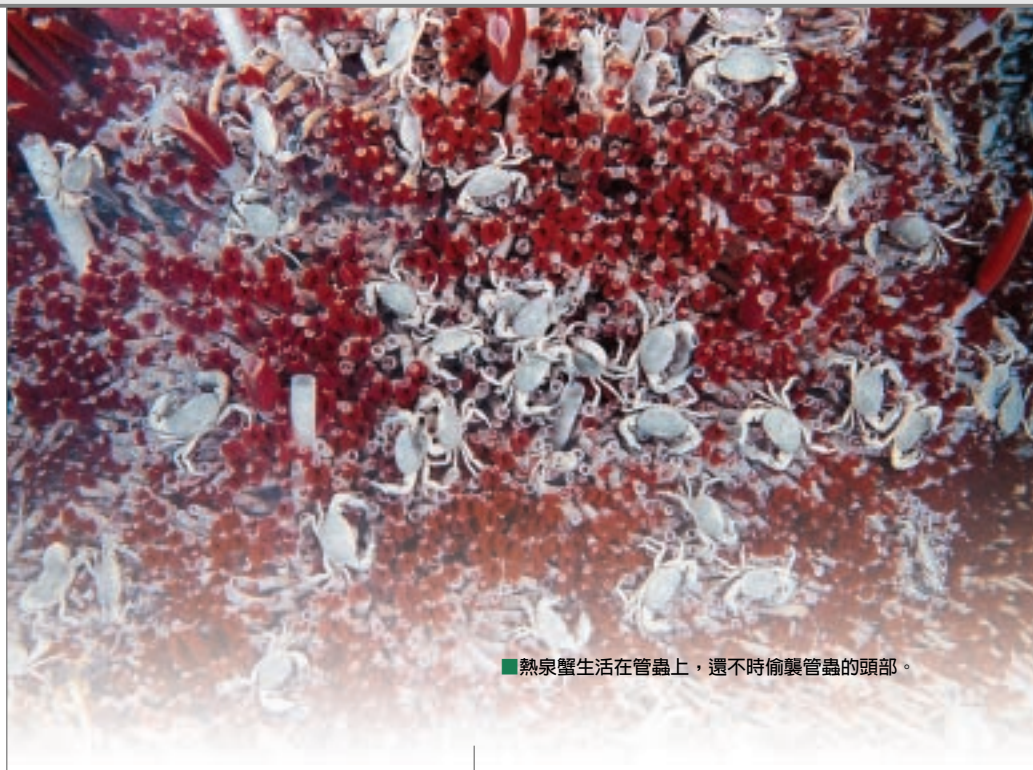
劇場篇

太空劇場影片

深海火山

深海探測潛艇「愛文號」(Alvin)攜帶高科技的儀器、燈光和攝影技術，將三千多公尺下的神秘景觀，盡收在「深海火山」這部影片裡，揭露了一個迥異於我們所熟悉的生存環境。

大西洋中洋脊 (Mid-Ocean Ridge) 位於 3500 公尺的海面下，長度有六萬四千多公里，寬度有800公里。中洋脊的熱液噴口噴湧出含有礦物質、金屬的熱水。在噴口的附近有將近240倍的大氣壓力，溫度的變化從攝氏2度到400度，在這不可能有生物存在的地方，奇妙的動物以此為家。



■熱泉蟹生活在管蟲上，還不時偷襲管蟲的頭部。

■熱泉蝦以細菌為食，常數百萬隻群集在熱泉區。

■熱泉蟹

■黑煙囪噴出大量煙霧狀的礦物質和金屬，周圍有大量蝦子聚集，找尋細菌為食。

海底4000公尺！水溫超過攝氏100度！這應該是一個水深火熱、暗無天日，沒有任何生物可以存活的煉獄，可是它卻是一個小小的快樂天堂。許多蝦、貝、管蟲和細菌在這裡自在的生活。本片隨著深海潛艇愛文號一起到深海火山形成的熱噴泉旁，探究一個人類全然陌生的新世界。

以往的科學家認為陽光是地球生物唯一的能量來源，而氧氣則是存取能量的必要工具。可是新近在深海熱噴泉口發現的特化細菌，卻以深海火山的地熱作為能量來源，把劇毒的硫化氫當作食物；大型管蟲靠著和它們共生取得能量；蝦子和螃蟹則不時衝入超過攝氏100度的熱泉口捕食細菌。

地球薄薄的漂動地殼之下是熾熱熔融的岩漿，天然放射性元素提供的能量，使地心

■煙囪噴出的熱泉高達400℃，可以將鉛熔化。

■「愛文號」潛艇測試照明燈，每個燈泡為1200瓦，在岸上測試時必須噴水降溫。

■被暱稱為小飛象的章魚

溫度高達攝氏 6000 度。當岩漿從海底的板塊縫隙中湧出形成中洋脊時，它將地殼及海水加熱並釋放出營養鹽，作為許多深海生物的食物來源，形成了一個和地表環境截然不同的生態環境。

■「愛文」號從母船「亞特蘭提斯」號下水，準備前往深海熱泉區探測。

動物大遷徙

宇宙的運行、大自然的變化，帶動著地球上季節的交替，溫度、氣候的變遷，大自然的力量影響了地球上生物的作息。動物更為了順應地球環境的變遷及生存，必須隨之遷徙及適應。

在印度洋中的聖誕島上，數以萬隻的紅蟹(Red crab)，每年11月雨季來臨時，像行軍般的遷徙到海邊交配、產卵；身著華麗彩衣的大樺斑蝶(Monarch butterfly)又被稱為帝王蝶，萬蝶飛舞，每年飛越美洲大陸前往墨西哥中部度冬；灰鯨(Gray whales)從北極冰洋向南遷徙到溫暖的墨西哥海域避寒；東非的斑馬與牛羚在非洲大草原上隨季節的變化、水草的豐枯而遷徙；鳥類更運用地球磁場的感應、直覺及地標等作導航而遷徙飛行。大自然的變化，牽引著動物的大遷徙，週而復始生生不息，而人類在自然與文明科技之間扮演著重要的角色。

造訪珊瑚礁

珊瑚礁是孕育海洋多樣化生態的重要推手，而珊瑚是腔腸動物的一種，牠們的食物除了水中的浮游動物外，最主要的是來自珊瑚身上的共生藻類，藉由它們來進行光合作用，攝取本身代謝所需的能量。珊瑚成長時會分泌一種碳酸鈣，這種含有碳酸鈣質的石灰石(Limestone)，在層層的堆積相疊之下，逐漸形成巨大的珊瑚礁。

本片由MacGillivary Freeman影片公司繼「登峰造極」、「洞穴搜秘」、「偉哉聖母峰」、「海豚」之後又一鉅作，片長約 46 分鐘。片中由海洋生物學家理查派爾及海底攝影專家霍華豪爾、米雪豪爾，帶領大家到南太平洋的世界軟珊瑚之都—斐濟，去瞭解當地是如何維護海洋生態的均衡及珊瑚白化的成因是什麼？是過度的捕撈魚類還是海洋的暖化呢?珊瑚礁的化合物又有何醫療用途呢？為什麼在實驗室複製產自珊瑚礁的化合物，可以解除慢性疼痛以及協助分娩，甚至延長愛滋病患的生命，這是珊瑚礁的另一重要研究。

臺灣四周環海，海底資源更是豐富，透過本片的闡釋提昇一般民眾珍視臺灣海洋資源的保護意識。同時藉由IMAX公司獨有的超廣角、超解析攝影鏡頭拍攝，將美不勝收的海底珊瑚畫面活生生的呈現在觀眾眼前。

立體劇場影片

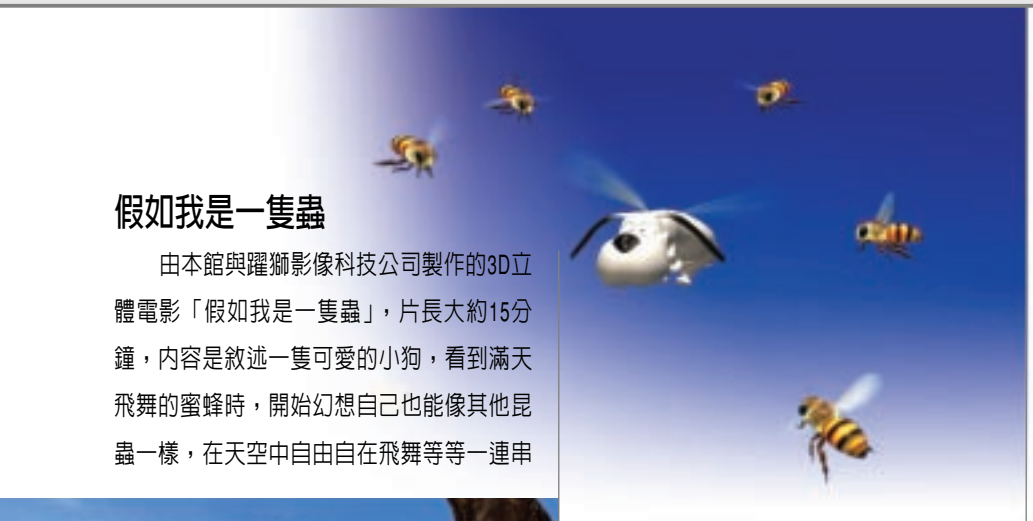
金銀島奇遇記

「金銀島奇遇記」係美國 Iwerks 公司採用特殊的立體電影效果手法拍攝，營造全新感官娛樂視野的世界。內容敘述一個名叫「大衛」的小孩及一群海盜們，在冷面殘酷的「來福」海盜船長帶領下，到處掠奪過往船隻的金銀財寶，貪心的船長為了獨吞寶藏，除將金銀財寶埋藏在加勒比海的荒島上—海盜之島，並設計將大衛及海盜們困在死人洞穴裡。最後，正義終於打敗邪惡，貪心的「來福」船長終於受到應得報應等一連串驚奇冒險的故事。

變調伊甸園

為響應政府推動地球村環境保護政策，本館率先推出美國 nWave Pictures 公司出品 3D 動畫影片「變調伊甸園」，期望藉由影片之播放，讓社會大眾學習尊重生命、尊重自然，以及思考如何與大自然和平相處之道。

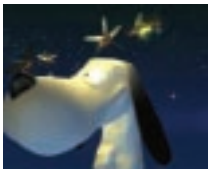
變調伊甸園 3D 動畫影片內容，係由人類賴以生活的地球出發，從天上、地上、海洋等三個不同角度，藉由影片中虛擬生動的故事人物，以及熊貓、海象、北極熊、海龜、海馬、海鰻、鯊魚、海豚、猩猩、巨蟒、長臂猿 等動物，以最真實活潑又緊張刺激的演出方式，一同來探討人為破壞地球環境生態最真實的情形。



假如我是一隻蟲

由本館與躍獅影像科技公司製作的3D立體電影「假如我是一隻蟲」，片長大約15分鐘，內容是敘述一隻可愛的小狗，看到滿天飛舞的蜜蜂時，開始幻想自己也能像其他昆蟲一樣，在天空中自由自在飛舞等等一連串

故事情節發展。整個故事除了可愛的小狗主角外，還包括蜜蜂、蝴蝶幼蟲、擬人化的蝴蝶、獨角仙、擬人化的蒲公英、螢火蟲，以及一大片的太陽花及百合等等人物。透過3D動畫故事情節編排及立體劇場杜比環繞音響音效帶動下，穿針引線的勾勒出幻想、逗趣、緊張、生動、逼真、身臨其境的3D立體虛擬世界。



疾速狂飆

疾速狂飆影片內容，是描述一個吊兒郎當的賽車好手和他的團隊，參加一項奇特的立體大賽車。主角原本自恃技術高超，因此態度非常散漫，成為隊友們的頭痛人物。但是當他在千變萬化的立體賽車場中，因為屢遇險阻而體會到合群團結的重要，於是改變了原本散漫的態度和隊友團結合作，最後終於贏得了冠軍。

疾速狂飆立體影片利用光學原理模擬人類兩眼「視差」，造成遠近錯覺的立體效果。觀眾戴上立體偏光眼鏡之後，所看到的畫面就再也不是一般影片那種單調的平面影像了，而是浮突出銀幕之外恍如真實的 3D 立體效果。本片透過立體劇場引進的美國 Iwerks 公司大型 70mm 放映系統及 Doby 環繞音響以及超大銀幕，以極佳視野原音再現，帶給觀眾如同身臨其境般的 3D 立體疾速狂飆的新視覺感官享受的極致效果。

劇場統計概觀

本館經營太空劇場、立體劇場、鳥瞰劇場、環境劇場，藉尖端科技、聲光、電化等儀器設備，將自然現象和科學知識，以影片放映方式使觀眾親身體驗，達成寓教於樂、推廣科學教育之目的。茲將本館92、93年度各劇場放映之相關資料分述如下：

■天文星象多媒體節目

為充分發揮太空劇場設備、人力功能，並全力配合中小學地球科學課程，本館除製作天文星象多媒體節目放映外，並實施免費星象教學，92 年共計 24 場次 4,779 人，93 年共計 94 場次，參觀人數為 10,845 人。

■太空劇場

- 92年：放映「人體的奧秘」、「偉哉聖母峰」、「活生生的海洋」、「造訪珊瑚礁」等4部影片，共計放映 2,055 場次，參觀人數331,532人。
- 93年：放映「造訪珊瑚礁」、「動物大遷徙」、「深海火山」等 3 部影片，共計放映 2,322場次，參觀人數 425,531 人。

■立體劇場

- 92年：放映「金銀島奇遇記」、「深海迷航」、「假如我是一隻蟲」等 3 部影片，共計 1,958 場次，參觀人數為 291,174 人。
- 93年：放映「假如我是一隻蟲」、「變調伊甸園」等 2 部影片，共計 2,177 場次，參觀人數為 291,529 人。

■鳥瞰劇場

- 92年：放映「大自然的奧秘」、「生命的起源」等 2 部影片，共計放映 1,926 場次，參觀人數為 128,584 人。
- 93年：放映「大自然的奧秘」、「生命的起源」等 2 部影片，共計放映 2,013 場次，參觀人數為 115,163 人。

■環境劇場

- 92年：放映「日夜的交替」、「四季的變化」、「生命的節奏」等3部影片，共放映 1,197場次，參觀人數為 56,345 人。
- 93年：放映「日夜的交替」、「四季的變化」、「生命的節奏」等 3 部影片，共放映 718場次，參觀人數為 28,908 人。

93年劇場參觀人數統計表

劇場 / 月份	太空＋星象		太空劇場		星象		立體劇場		鳥瞰劇場		環境劇場	
93年	場次	人數	場次	人數	場次	人數	場次	人數	場次	人數	場次	人數
1月	206	30146	150	27164	56	2982	182	21306	176	8968	0	0
2月	166	31041	165	30915	1	126	175	22073	161	8441	0	0
3月	1209	36734	198	33795	11	2939	182	22976	171	9097	0	0
4月	203	39929	198	38592	5	1337	182	24665	177	8857	0	0
5月	209	37617	202	36539	7	1078	182	21521	182	9243	0	0
6月	204	29451	200	28809	4	642	182	16949	168	6811	0	0
7月	207	45032	207	45032	0	0	182	28118	168	14099	0	0
8月	193	49535	193	49535	0	0	175	30194	181	17456	124	7829
9月	195	28794	194	28524	1	270	182	14155	145	6485	151	4284
10月	214	37271	212	36756	2	515	189	23603	170	8565	135	4862
11月	197	36231	194	35865	3	366	175	31964	147	8203	146	6029
12月	213	34595	209	34005	4	590	189	34005	167	8938	162	5904
合計	2416	436376	2322	425531	94	10845	2177	291529	2013	115163	718	28908

館外推展篇

巡迴外展

為倡導終身學習，推動全民科學文化教育和自然保育，充分利用本館教育資源，擴大博物館功能，本館接受全國各公私立社會教育機構、學校及其他公司團體申請「外借特展」。

■巡迴展示車

巡迴展外借表（92~93）

■大熊貓展

年度	展出時間	借展單位	備註
92	01/24~06/01	高雄國立科學工藝博物館	
	09/25~10/19	科博有約在馬祖	
93	01/24~03/26	宜蘭自然史教育館	
	07/06~07/21	宜蘭觀光協會	

■花的前世今生

年度	展出時間	借展單位	備註
92	09/17~12/09	中央研究院植物學研究所	
93	01/05~03/31	高雄佛光山美術館	
	01/24~03/26	高雄高苑技術學院	
	07/03~09/10	臺南自然史教育館	

■SARS特展

年度	展出時間	借展單位	備註
92	08/13~08/27	臺積電	
	09/25~10/19	科博有約在馬祖	
93	01/24~03/26	高雄高苑技術學院	
	05/15~05/25	宜蘭自然史教育館	
	08/02~08/10	花蓮中國童子軍	

■時間特展

年度	展出時間	借展單位	備註
92	02/01~02/28	草屯鎮玉皇宮	
	09/02~09/30	高雄高苑技術學院	
	01/24~03/26	嘉義天文學會	捐贈

■月岩特展

年度	展出時間	借展單位	備註
92	03/15~	中央氣象局臺灣南區氣象中心	捐贈

■從太空看家園

年度	展出時間	借展單位	備註
92	06/06~	彰化南郭國小	捐贈


■從太空看家園特展


■野生動物攝影展


■聖母峰50週年特展

■火星大接近

年度	展出時間	借展單位	備註
92	08/13~09/14	嘉義天文學會	捐贈

■科學新知

年度	展出時間	借展單位	備註
92	11/23~	嘉義天文學會	捐贈

■野生動物攝影展

年度	展出時間	借展單位	備註
92	12/11~	臺北市立動物園	捐贈

■聖母峰 50 週年

年度	展出時間	借展單位	備註
93	03/15~04/15	宜蘭自然史教育館	

■火星大探險

年度	展出時間	借展單位	備註
93	05/04~05/18	彰化高中	
	06/03~07/03	苗栗苑裡高中	
	01/24~03/26	桃園大岡國中	

■鯨豚特展

年度	展出時間	借展單位	備註
93	03/26~04/07	彰化新港國小	
	04/06~06/30	臺南自然史教育館	

■國科會科學週：永續的河川與海洋特展

年度	展出時間	借展單位	備註
93	03/	臺中市中正國小	
	04/	臺中市東海附小	

■眼見未必為憑

年度	展出時間	借展單位	備註
93	06/30~09/15	臺北縣立十三行博物館	
	11/20~12/10	桃園大岡國中	

■入侵紅火蟻

年度	展出時間	借展單位	備註
93-94	12/16~01/16	臺北市立動物園	

展示巡迴車外借表（92~93）

年度	展出時間	借展單位	備註
91~92	12/20~01/02	臺北華納威秀影城	
92	01/03~01/18	臺北當代藝術館	
	01/24~03/26	本館	
	04/01~05/04	高雄國立科學工藝博物館	
	07/11~07/31	桃園縣政府文化局	
	08/01~08/21	桃園新屋蓮園	
	08/22~08/31	桃園世貿展覽中心	
	09/19~10/26	臺灣省政府	
	11/01~11/31	臺北縣立十三行博物館	
93	01/23~02/08	臺東國立臺灣史前文化博物館	
	02/12~02/15	臺東成功水產學校	
	03/05~04/05	高雄高苑技術學院	
	04/06~05/10	臺南自然史教育館	
	06/01~06/15	苗栗苑裡高中	
	08/02~08/10	花蓮中國童子軍	
	11/25~12/16	臺北麗力國小	

■火星大探險特展

■眼見未必為憑特展

■入侵紅火蟻特展

常設展更新篇

一、「館史室」更新為「蒐藏秘室」

展示與教育活動是觀眾與博物館互動的介面，然而博物館的核心工作——蒐藏與研究，卻往往隔著厚厚的牆門而不易被觀眾看到。為讓觀眾對博物館的蒐藏與研究有更深一層的認識，本館於 92 年 7 月 17 日開始，將原來的館史室改為「蒐藏秘室」，介紹研究人員的研究成果，如地質學組研究員所發現的新恐龍、動物學組對海星生殖模式的發現，及人類學組在臺中市惠來里的考古發現等。此外秘室內也展出多樣的標本蒐藏形式。

二、93 年 4 月 23 日完成科學中心「科學探索」展示區更新

■科學探索展示區——全像術攝影

■科學探索展示區——可調控的光圖

■科學探索展示區——斷裂帶

三、完成生命科學廳二樓「古埃及木乃伊展示」

為本館自法國華裔古埃及學專家取得之展品，包括男性木乃伊及人型棺柩等，並配合影像、圖片，展現古埃及人防腐的技術，及對於了解古埃及人的死後世界，特別是來世觀中，人死後靈魂與肉體共存、共生關係具有展示視覺上的美學效果。

四、「積體電路的世界」展示換新裝

由臺灣積體電路公司捐贈本館的「積體電路的世界」展示，於 92 年 9 月以全新的面貌與觀眾會面。一進入展場內，首先映入眼簾的是閃閃發亮的放大真空管，在真空管的四周，則介紹電子發展史，而 3D 劇場區內放映的立體影片為「晶圓廠之旅」。

■科學探索展示區——白努利漂浮物

■「真空管」展示，後方為「電子發展史」展示面板

■電玩 X-BOX

此外，觀眾在互動展示區透過操作互動式展品，可以了解什麼是絕緣體、導體或半導體。在晶圓廠中，則可看到製作積體電路的流程與部分的機臺原件，以及6吋、8吋與12吋晶圓晶粒數比較的展示。在生活應用展示區內有微波爐、電話、手機、DVD等應用積體電路的陳設展示。在操作應用展示區內，觀眾更可模擬現金卡的使用，掃描寵物身上的晶片，瀏覽來科博館的電子地圖，玩 X-BOX 電玩，操作模擬電腦算算數的展示。

五、93年5月3日完成生命科學廳「人類的故事」展示區更新

六、完成科學中心四樓「物質世界」展示區更新

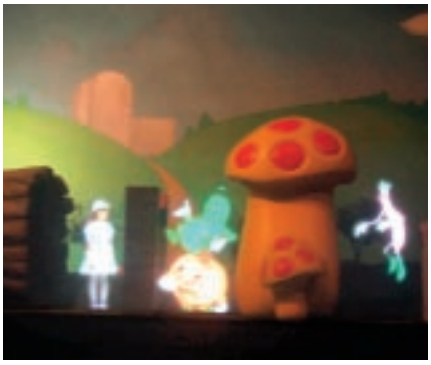
七、93年8月4日「恐龍時代展示更新」

恐龍時代展示隨著生命科學廳的開放，至今已有十多個年頭，其中「最後的晚餐」展示，更是許多小朋友的最愛。但隨著過去古生物學的各項發現，對恐龍的了解有非常大的貢獻，因此恐龍時代展示的內容更顯得有迫切更新的必要。除了內容的更新外，最大的特色是放進珍貴的原件標本。最初的恐龍時代展示是在本館還沒蒐藏恐龍標本前所蓋的，所以展示都是復原骨架的複製品或模型。經過多年的蒐藏，我們終於展出一些原件標本，包括了於 92 年購買的甲龍頭骨、6 隻竊蛋龍群體埋藏的化石標本，還有特暴龍的頭骨和完整性很高的小暴龍骨架等。這些標本都是在蒙古發現的，時間為晚白堊紀。

另外，本次更新也展出 4 隻機械恐龍，包括一隻長達 7 公尺、高 4 公尺的暴龍及兩隻迅掠龍，以增加展示的效果。

■人類的故事展示區

■物質世界展示區──天旋地轉

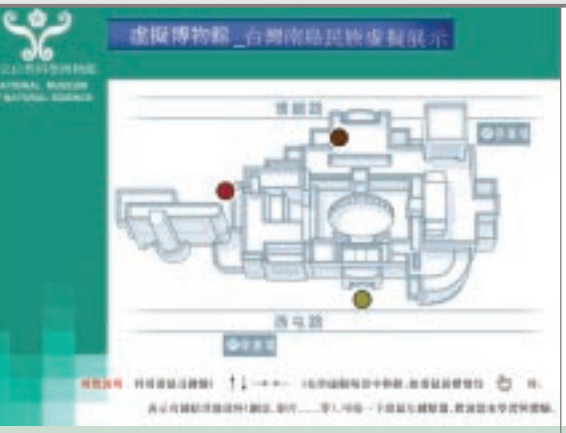


■物質世界展示區──魔幻劇場

建構數位展示空間篇

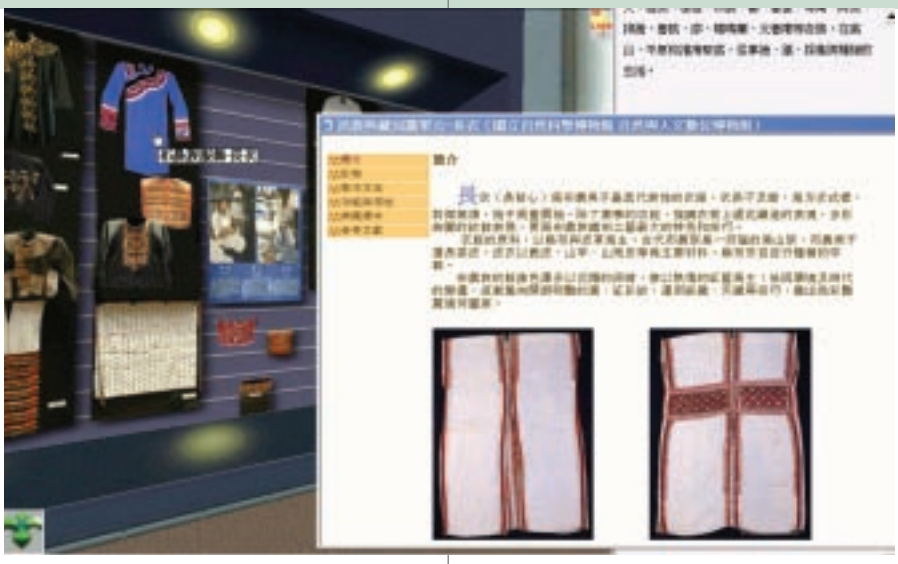
一、阿里山山脈與鄒文化博物館

「阿里山山脈與鄒文化數位博物館」以影像、聲音、文本之蒐藏與研究成果呈現，描繪阿里山鄒人強調「起源」、「中心」、「階序原則」、「知識的實用」、「社會作為一種植物隱喻」等概念，比較阿里山鄒人與（不同學科背景的）研究者對自然與文化認識的相同與差異。「阿里山山脈與鄒文化數位博物館」的整體架構區分為五大部分：(一)主題展示（起源、自然觀、社會組織、文化形式、當代鄒人）。(二)特展室（狩獵文化、男子會所重建紀實、舊照片特輯）。(三)資料查詢（物件查詢、多媒體查詢、阿里山山脈與鄒文化資料全文檢索）。(四)資源中心（相關研究書目、鄒是論壇、文化地圖、相關連結）。(五)自然與文化教室（鄒語教室、自然與文化教室）。資料庫分為物種管理與多媒體管理兩個部分，其下分民族、考古、植物三大學門。多媒體的資料類型，分為圖片、音樂、影片。同一個物件，觀眾可以選取三類型的多媒體作為連結，了解該物件的特徵。多媒體管理資料庫中的藏品與資料的分類方式，以學門的分類建立樹狀表。物件與多媒體資料的連結，有助於增加知識內涵。除了強調物件後設資料的線性分析，也強調橫向的相關知識的連結。在鄒族文物的描述資料庫欄位中，參觀者可以點選「圖片連結」、「聲音連結」、「影片連結」，更可點選與其他學門資料庫中相關的標本。查詢一個物件時，同時獲取與此物件相關的其他學門的知識，以及相關的圖片、聲音與影像資料。查詢的介面分為三種：物種資料查詢、多媒體資料查詢、《阿里山鄉志》全文檢索。物種資料查詢與多媒體資料查詢，又可分為一般查詢與複合式查詢。目前這些資料已（藉由資訊技術）步出博物館，在阿里山鄒族達邦大社隸屬小社（新美村）的國小課程中運用。



二、臺灣南島語族虛擬博物館

「臺灣南島語族虛擬博物館」的資料庫與多媒體包含下列內容：(一)建置科博館所有地形及建物，並製作一個展覽館，包括「國立自然科學博物館之中國科學廳及地球環境廳廣場入口」、「臺灣南島民族展示廳」及「臺灣南島民族聚落展示立體模型」共計三座(阿里山鄒族達邦聚落、魯凱霧臺舊好茶聚落、蘭嶼達悟野銀聚落)，由聚落以虛擬復原方式，進入某房舍內部瀏覽，並在此虛擬房舍內之屋內陳設物品進行虛擬遊戲，如：織布、使用器物等。另外，根據此場景虛擬聚落生活模式重建，如：男子會所之聚會活動、狩獵活動、節慶活動等。其他相關連結如：1.排灣家屋（連結地質學與南島語族的家）。2.雅美拼板舟（連結植物學與南島語族的家）。3.臺灣生態（連結芸芸衆生之臺灣生態廳）。4.各族影片（九段）。5.阿美族港口豐年祭。(二)展示節目內容完成五十件展示品典藏知識單元連結（例如：服飾、宗教器物、農具、漁具、獵具、陶器、雕刻、編器、工藝與藝術），並同時提供中英文網路及光碟版內容。(三)為充實展示內涵及視聽效果，本計畫整合了本館所擁有的背景音樂、影片（錄影帶）、動畫及簡訊內容，並在展示設計中設計動畫作為主動呈現或與使用者互動。



研究與發展篇

王嵩山　研究員兼主任

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劉德祥　副研究員

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楊中信　副研究員

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陳輝樺 副研究員

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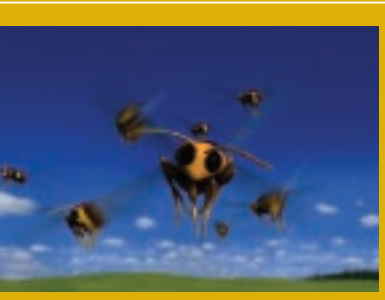
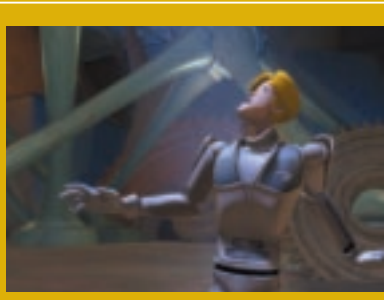
結語篇

兩年來，本館在展示經營上顯現出豐碩的成果。在展示數量上，實現館長推出無數「小而溫馨且感人」多樣化展示的期待，跨越動物園與博物館之間橫梗不能跨越界線的刻板印象，適時而且適當的維修展示品以確保參觀品質，引進大型的特展（如埃及文物展、Future Face、City of Pompeii、Waka Moana），開發劇場影片（如立體劇場影片「飆火星」、「飛魚向前衝」等），邁向數位展示的領域，並著手逐步地更新幾個常設展。

展示組的基本任務非常明確：為增進社會大眾對自然史與文化史的意識與瞭解，以館藏標本與文物為主要媒介，由館內研究人員擔任策展人，辦理關懷科學與社會文化發展之議題性、科際整合的展示，或依規劃主題向（國內、外博物館）商借標本與文物。此外，推動「特展」外借或巡迴展示車進入偏遠地區，讓未能到館參觀之民眾，得以參與展示教育活動，藉以普及全民科學與文化知識。

展望未來，為了既可發揮個別展示的吸引力，又可結構出探問科學與文化議題的深度，持續的預先訂定年度的「特展主軸」（如：「結構與變異」（94年）、「生產與繁衍」（95年）、「資訊與生命」（96年））是有所幫助的。此外，製作有趣的巡迴展示與繼續引進國外大型展示，是博物館展示部門發展文化創意產業的基礎。再說，要深化展示的業務，不只應加強博物館展示之基礎研究，更要善用數位技術架構以經營「展示知識管理網」，內涵資訊至少應包括：展示規劃與設計實務、國外博物館展示大觀、歷年特展實例、展示社群交流網、維修與施工規範（SOP）、展品倉儲與物料管理、巡迴展示管理機制、展示資料庫（影像、文摘、統計、工具與設備、國內外重要設計師，環場系統，電子報、展示相關社群經營與管理），以及建構「生物與文化多樣性虛擬展示」。



>> Biennial Report of Exhibitions

for 2003-2004

Introduction

Discover the World through Objects

A cultural institution like a museum usually presents itself through interpretation and communication elicited by exhibitions and educational programs, while collection and research help to validate the reasons for its existence. Exhibitions and educational fulfillment enable museum visitors to explore the depth and breadth of collections and

museum researches. For a museum to pursue the unique achievement of "museology" and to conserve the cultural artifacts of humanity, the most important foundation is that of collection, followed closely by the behavioral and sociological implications contained within the collection.

An attractive exhibition, be it permanent or temporary, is usually constructed from a variety of specialized collections. It is noteworthy that these agglomerated, frozen, constructed and decontextualized objects and collections are frequently used to present a dynamic world within the museum environment.

Exhibitions of a museum can be divided into two types: temporary exhibition and permanent exhibition. The two are different in nature and yet they complement each other. Museums usually use permanent exhibitions to present their self-recognition, and mark the basic tasks, directions, interest in collection and research of the museum. Permanent exhibitions are carefully maintained by a group of task-oriented staff members. These exhibitions, supported by stable organization and resources, deal with widely

accepted theories in fields of natural science and the humanities.

In contrast to temporary exhibitions, permanent exhibitions exist for a long time and they tend to be static. On the other hand, temporary exhibitions exploring possible dimensions of given knowledge are supported by temporary organization and resources. Hence, they tend to be more dynamic. Temporary exhibitions are characterized by certain people consciously displaying certain objects in a given time and space. For all museums, since the most important job is to constantly curate attractive temporary exhibitions, these temporary exhibitions somehow play the role of ceremony in society, through their multiple functions.

First of all, museums use temporary exhibitions as an opportunity to sell publications of the museum, so that these publications would not be kept in the museum forever. This is in fact the basic responsibility of a museum. Exhibitions using collections of the museum showcase the abundance of the museum. Hence, these traditional temporary exhibitions are often descriptive and authoritative. However, temporary exhibitions can also be

a venue to present new academic studies and new artistic creations. Through temporary exhibitions, we can challenge our findings in the past, praise the creativity of artists and support the basic values of reason and imagination.

In recent years, people have expected temporary exhibitions to become a dynamic forum to actively address social issues and to be concerned with different subjectivity. Hence, temporary exhibitions have become a way for a museum to participate in the social and cultural development of a society. This type of temporary exhibition emphasizes subjective interpretation and uses innovative displays to provide different people, such as avant-garde and experimental artists more opportunities for proposing new ideas.

Also, temporary exhibitions are often

connected to cultural industries, with the objective of promoting certain products. Temporary exhibition have thus become part of the market system in which curating companies, curators, exhibition manufacturers, facilities and media are all interconnected. Since temporary exhibitions attract large numbers of visitors, they have become mechanisms to generate income. Indeed, a unique and magnificent temporary exhibition does help a museum to generate profit. However, the emergence of "blockbusters" from various national museums foretells the future direction of museums in Taiwan. When promotion is no longer the means, but the end, exhibitions will inevitably be controlled by the mass media. Once a museum starts to define itself on the basis of market demand, commercialization will ultimately damage its survival. At the very least, the existence of such a museum in a capitalist society will be marginalized.

Obviously, a temporary exhibition can help the museum's development, yet it might also violate the fundamental values that facilitate scientific and cultural development; it can focus on subjective interpretation, yet it can also be so monopolistic and exclusive that the real needs of cultural democracy are ignored. Contemporary museums must develop new humanistic concerns, new ways to curate exhibitions and continue to try to ensure that the audience truly understands the exhibition.

2003 and 2004 are two very fruitful years for National Museum of Natural Science. Exhibits Department of the NMNS attempted to complete the museum's tasks to interpret and communicate from various angles of natural history and cultural history, such as "evolution", "classification" and "ecology". Through these exhibitions, the museum reviewed its original goals and continued to reflect the needs of the society. At the same time, the exhibition galleries and exhibits were carefully maintained. Through exhibits, we can discover the world from a new point of view, enhance the general public's ability to understand science and culture. These exhibitions, which are based on natural history and cultural history, reflected the vitality of science and socio-cultural system, and lay a solid foundation for cultural creativity.

Temporary Exhibitions in 2003

Special Exhibition for the Chinese Lunar Year of the Goat——Looking for the Goat

- January 10th to April 13th, 2003
- Corridors around the Oval Plaza

Ancient people started to domesticate goats, bison and gaur around 6,000 B.C. At that time, animals were considered to be both sacred and slavish. As sacred symbols, animals symbolized fertility and prosperity. As slaves, animals served to satisfy people's needs for clothing, food, dwelling and transportation. It is difficult to precisely pinpoint when the ancient Chinese developed the cultural practice of calculating the lunar year with the signs of 12 animals, but it is obvious that, for a long time, "goats" have been considered synonymous with good luck in the Chinese world.

Offered by the co-sponsor, Livestock Research Institute in Hengchung, Council of Agriculture, the NMNS exhibited a common domesticated goat in Taiwan, the Taiwan black goat, in this special exhibition. Using the indoor and outdoor space along the corridor, the Museum prepared a variety of exhibits related to goats including games, interactive exhibits and panels covering dozens of bone specimens of Perissodactyla and Artiodactyla provided by Taipei City Zoo, another co-sponsor. The exhibition looked at goats from different aspects, including legends of goats under the heading of "goat culture"; fairy tales of goats under the title of "goats in fairy tales"; species and ecological habits under the title "survival of goats"; and products with the heading "consumption related to goats". It was an exhibition to celebrate the new lunar year of the goat.

Peoples from Heavenly Blue and Earthly Red——Native Cultures of the American Southwest

- January 24th to June 15th, 2003
- First Special Exhibition Room

The special exhibition showed 343 objects to represent traditional material cultures of native Americans from the southwestern United states. Among the objects, there were two similar spoons which vividly revealed the traditions of the Native Americans as well as the changes in the native culture, as the second one was produced one thousand years later than the first one. Apart from the traditional commodities, such as pottery, woven baskets, hand-woven blankest and leather costumes, the exhibition also displayed handcrafts as well as earthen puppets and wooden figures of Katsinas created according the religious beliefs of Native Americans.

Katsinas are supernatural beings in the religion of the Hopis. Each Katsina has its own function and there are two to three hundred Katsinas in total. The museum also made a model of a Hogan, the traditional Navajo dwelling, as well as a model of an Indian Market of the 1950s. In addition, pictures and models were used to display an Apache girl's puberty ceremony, a Hopi wedding, a religious ceremony of the Navajo, a Pueblo dance ceremony and Indian vendors selling com-modities on the platforms in the early 20th century. A traditional house of mud and bricks and a tent were reconstructed in the outdoor plaza of the Museum for visitors to see more clearly the traditional way of life of Native Americans.

Exhibition of the Giant Squid
March 2003
1st Floor of Global Environment Hall

After three years of preparation, the Museum presented one of the biggest squids in the world, *Architeuthis sanctipauli* (Velain 1877). Together, the giant squid, the base, container and the formalin weighed 4 tons, which made things really difficult for the Museum. Thanks to a transparent container, visitors can look at the standing giant squid from three sides, with a clear view of the ring teeth in the suckers and the siphon the animal uses to jet water out for movement.

Architeuthis sanctipauli is a member of the phylum of mollusca, the class of cephalopoda, the order of Teuthida and the family of Architeuthidae. This giant squid is 8.84-meters long and 240 kg in weight. It was captured by the National Institute of Water & Atmospheric Research of New Zealand in the ocean of New Zealand, and subsequently given to NMNS as a gift. Giant squid have very large eyes with which they hunt other fishes and cephalopods for food. Its natural enemy is the sperm whale, who will submerge to the deep habitat of giant squid to catch them. Scientists have found squid beaks in the stomachs of captured whales, which proved that giant squid are an important source of food for sperm whales. So far, scientists have not been able to fully understand the life of giant squid. However, we do know that giant squid regularly reappear at the sea area off New Zealand from December to March for breeding and then disappear after April; hence it is very likely that the animal migrates. Unfortunately, we have not been able to determine the areas they inhabit or where they spawn.

Images of the Forest
February 21st to March 9th, 2003
Third Special Exhibition Room

The exhibition displayed sixty award-wining works of the 2002 Photo Contest of Taiwan Forest Ecology and the works of the winning photographers of the Internet Contest of Forest Scenery. The photos of the photo contest are 56 × 66 cm in dimension while the scenery works are much larger. All together, these works aims to raise the public's appreciation of the diversity and beauty of Taiwan native forests.

Friends on the East Coast of Taiwan—— Photography Exhibition of Dolphins

April 1st to July 30th, 2003

Third Special Exhibition Room

Many people might not be familiar with the fact that dolphins and whales are frequent visitors off the coast of Taiwan. Whales and dolphins are mammals, not fish, so their behaviors are actually quite similar to that of human beings. For instance, cetaceans have long childhoods (periods of maturation). A whale or a dolphin can only breed after it becomes mature at the age of six and over. After each pregnancy, they give birth to one calf, which will enjoy lactation for an average of 1 year. A whale will breed once every 2 to 3 years, so it takes a long time for whales to multiply. Whales and dolphins breathe through blowholes located near the top of their heads, so it is possible for them to drown under water. To adapt to life under water, whales and dolphins have a very thick layer of fat under their skin (called blubber) to help them ward off wintry temperatures; however, when the surrounding temperature rises, they can become overheated. Moreover, a lot of dolphins live in schools. All these features make cetaceans extremely vulnerable when they face unfavorable environmental conditions. Currently, all cetaceans are listed as endangered species.

In Taiwan, research on cetaceans didn't start until the early 1990s. In recent years, thanks to marine-based investigation and whale-watching activities, research institutes and social groups have gradually accumulated more and more first-hand information and photos of wild whales and dolphins. The NMNS cooperated with the Kuroshio Marine Foundation to present photographic works collected by the Foundation, in order to introduce the whales and dolphins frequently spotted off the east coast, to museum visitors.

Peoples of the World

January 24th to March 23rd, 2003

the Plaza facing Situn Road

Co-organized with national Geographic Magazine (Chinese version), the exhibition showed a total of 57 photos, 10 maps and an interactive exhibition van used for scientific education. People passing by the plaza were often attracted to the gigantic photos in the plaza, as all the portraits were so colorful and expressive.

Mt. Everest Exhibition
April 21st to September 7th, 2003
Circular Lobby

On May 29th, 1953, New Zealander Edmund Hillary and Sherpa Tenzing Norgay became the first two persons in human history to reach the highest peak on the planet, Mount Everest. To celebrate the fiftieth anniversary of this illustrious

achievement, the NMNS co-organized this special exhibition with National Geographic Channel to display amazing pictures and images provided by National Geographic Channel. The Space Theater also featured the film "Mt. Everest" from April 22nd to May 6th.

The Invisible Enemy—— SARS
May 16th to November 16th, 2003
Outdoor area of Life Science Hal

The horrified epidemic of SARS shocked the world. Thanks to the joint efforts of scientists around the world, the medical community soon discovered that the epidemic was caused by a newly mutated coronavirus, which showed a different genetic makeup from previous known animal coronavirus.

In responding to the epidemic, the Museum developed an exhibition "The Invisible Enemy: SARS" to raise the public's awareness of this deadly disease. The exhibit began with the natural history of virus and its relation to human health was introduced. Possible pathway of the emergence of the new virus and route of transmission were also examined. In order to disseminate the information to a wider audience, four additional exhibits were built and displayed at the Taipei City Government City Hall, the National Taiwan Museum, the National Sun Yat-Sen Memorial Hall and the National Science and Technology Museum. This exhibition received the Annual Award for Social Education in 2004.

DNA 50
June 12th to August 10th, 2003
Plaza in front of Bird's Eye View Theater

April 25 2003 marked the fiftieth anniversary of the discovery of DNA's structure. In order to celebrate this important finding of the century, the Museum and the British Council jointly put up an exhibition for this special occasion.

The exhibition began with a historical review of the scientists and institutions participated in the discovery of the double helix. The exhibition then moved on to introduce the birth of the new gene technology and the application of this technology in basic as well as applied research fields such as medicine and forensic science. Following these, issues on the social and political implications of gene technology were also discussed. A special educational program "Make your own molecules" also accompanied the exhibition.

Exhibition of Ichthyosaur Fossils
June 12th to September 30th, 2003
Circular Lobby

The museum accquired a precious marine reptile fossil from Stuttgart Germany in 2003. Geology Department, Exhibits Department, Science Education Department and Collection Management Department of the NMNS worked together to organize an exhibition of these precious fossils. With technical supports from Kiko's Fossil & Mineral Museum, the Museum spent three months repairing the fossils. Specimens of *Ichthyosaurus* were kept in the stone, awaiting further research to reveal its importance and uniqueness.

The exhibition showed: (1) Ichthyosaur fossils, (2) marine reptile fossils from the Mesozoic Era, (3) species of *Keichousaurus*, including Ichthyosaur fossil, *Sinohydrosaurus*, *Placodus*, *Nothosaurus*, *Plesiosaurus* and Pachypleurosauria, most of which have been repaired and named. Through in-depth research on these precious specimens, scientists seemed to bring the Ichthyosaur that lived in the ocean hundreds of millions years ago, back to life.

Wildlife Photography Exhibition
July 9th to November 16th, 2003
the Plaza facing Situn Road

Co-organized with National Geographic Magazine(Chinese version), the exhibition displayed 42 masterpieces from world-class photographers. Apart from presenting the amazing beauty of wild animals, the exhibition also pinpointed the environmental crises to be found in the polar area, deserts and light forests, tropical rain forests and temperate areas. To help visitors understand the basic principles of photography and the special methods used by world-class photographers of National Geographic magazine, the exhibition also introduced these basic principles, and how these professional photographers photographed animals, people and landscapes. The Museum also held a photography contest: "Species through the Eyes of Children" to encourage children to carefully observe and record animals and plants surrounding them, and to share their photos and feedback with everyone.

Exhibition of Flightless Birds
July 1st, 2003 to January 10th, 2004
First Special Exhibition Room

Flightless birds mainly inhabit the southern hemisphere. These gigantic birds have no keel on their sternum and lack a strong anchor for their wing muscles. They also have small wings, short tails and no fat in the feathers; hence, they could not fly. However, these birds have strong legs enabling them to run very fast. Unless there is a sudden change of environment, these flightless birds usually continue to inhabit the same habitat. For instance, the cassowary and the kiwi usually stay in tropical or subtropical rain forests, alone or in pairs, while other birds flightless live in open grasslands, semi-arid areas or sparse shrubbery, in groups. These omnivorous birds have sharp vision and audition, except for the nocturnal kiwi whose loss of vision is compensated by sensitive smell and hearing. Mating patterns of flightless birds vary. Ostriches and Rheidae are polygamous, emus and cassowaries are polyandrous, and kiwis are monogamous. These birds produce very large eggs that require 7 to 8 weeks for incubation. Nestlings can become independent after 5 to 6 months. The appearance of these nestlings is very similar to that of grownups after 18 months, but they are not fully mature until age 2 or 3. Since ancient times, human beings have make use of these flightless birds: their meat, eggs, skin, feathers, fat, legs and even claws.

In the exhibition on flightless birds, one would find skin specimens and skeletons of ostriches, cassowaries, emus and kiwis. The exhibition also helped visitors better understand why these birds cannot fly, by explaining various factors including skeleton, feathers and keel on their sternums. Thirdly, the eggs of these birds were used in comparisons with their weights. The next section talked about the 'added value' of ostriches while the last section used interactive computer games to attract more visitors.

The Future is Wild
July 1st to November 30th, 2003
Second Special Exhibition Room

Co-organized with the Discovery channel, the NMNS presented the temporary exhibition: "The Future is Wild". Imagine what the world will be like 5 million years from now. What will the life be like at that time? The exhibition looked at the history of evolution from a revolutionarily new perspective and guided the visitors to imagine what the earth will be like after millions of years. At that time, the human being would probably have left the earth and be residing on various planets in the solar system, leaving unimaginable plants and animals on the earth.

In the exhibition, visitors could see the world predicted 5 million, 10 million and 20 million years from now, and explore the spectacular changes in the plants and animals on the earth. The well-grounded hypotheses helped explain the environmental and genetic factors affecting evolution. For instance, one would see terraneous squids and terraneous turtles bigger than the size of a elephant; alated

fish evolved from flying fish in the sky; sea birds swimming in the ocean, searching for food, and returning later to the land to breed and lay eggs. In the future, silver spiders would domesticate small mammals for food, just as we humans domesticate livestock today. Of course, these are the fantasies of scientists and some people might find them ridiculous. In the program related to the exhibition, we explained the theoretical foundations of these scientists when they imagined the possible paths of biomorphous life. Perhaps you would identify with their fantasies, or you might have different presumptions.

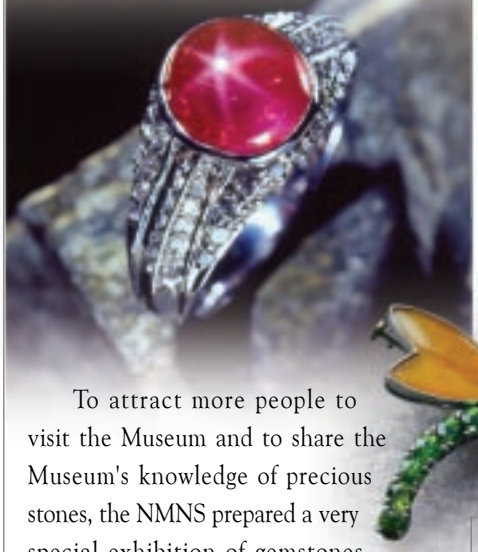
2003 Science Week——Rivers and Oceans, Challenges for a Sustainable Taiwan
August 22nd to December 22nd, 2003
Third Special Exhibition Room

In order to promote science literacy, the National Science Council launches a special exhibition program called Science Week in each summer. In 2003, the theme was "Rivers and Oceans Challenges for a Sustainable Taiwan".

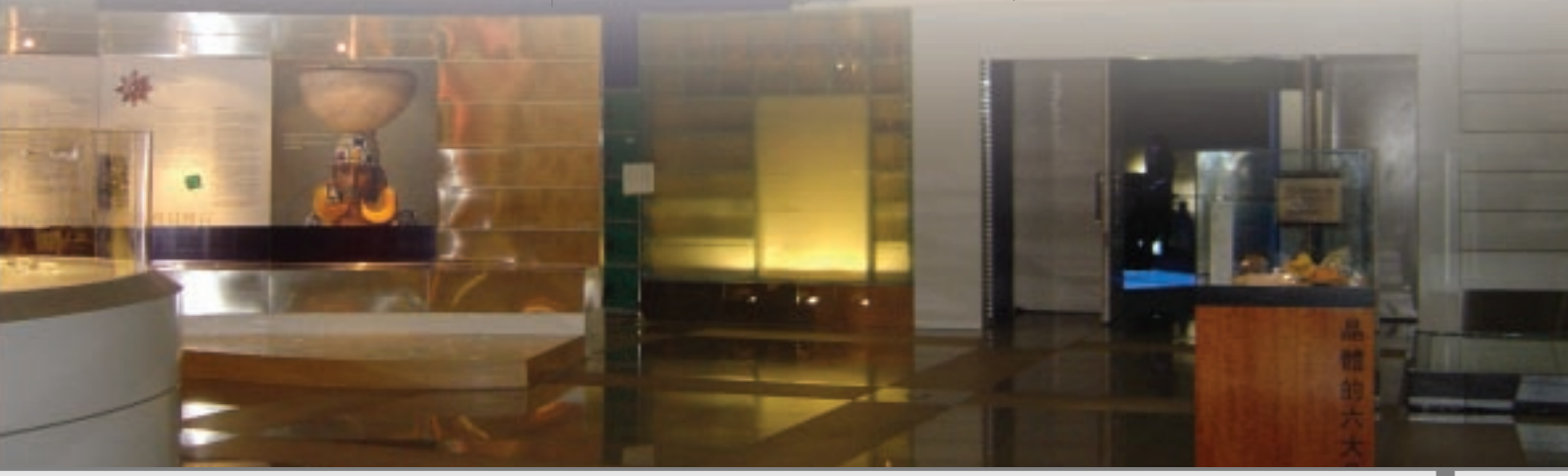
The exhibition featured Tachia River, the major river system in central Taiwan. The story began in the upper region of the river where the endemic fish, Formosan Landlocked Salmon, have been successfully

conserved. The exhibit themes then expanded along the course of the river to examine the ecological impacts of highland agriculture and dams until it reached the estuaries where the importance of wetland was emphasized. These themes were related to the context of sustainable development, which had been a major objective for future economic development. Field trips were also organized to visit the nearby Kaomei wetland.

Spirit in Stone——Gems & Jewelry Exhibition
October 10th, 2003 to March 31st, 2004
Mineral Hall & Environment Theater



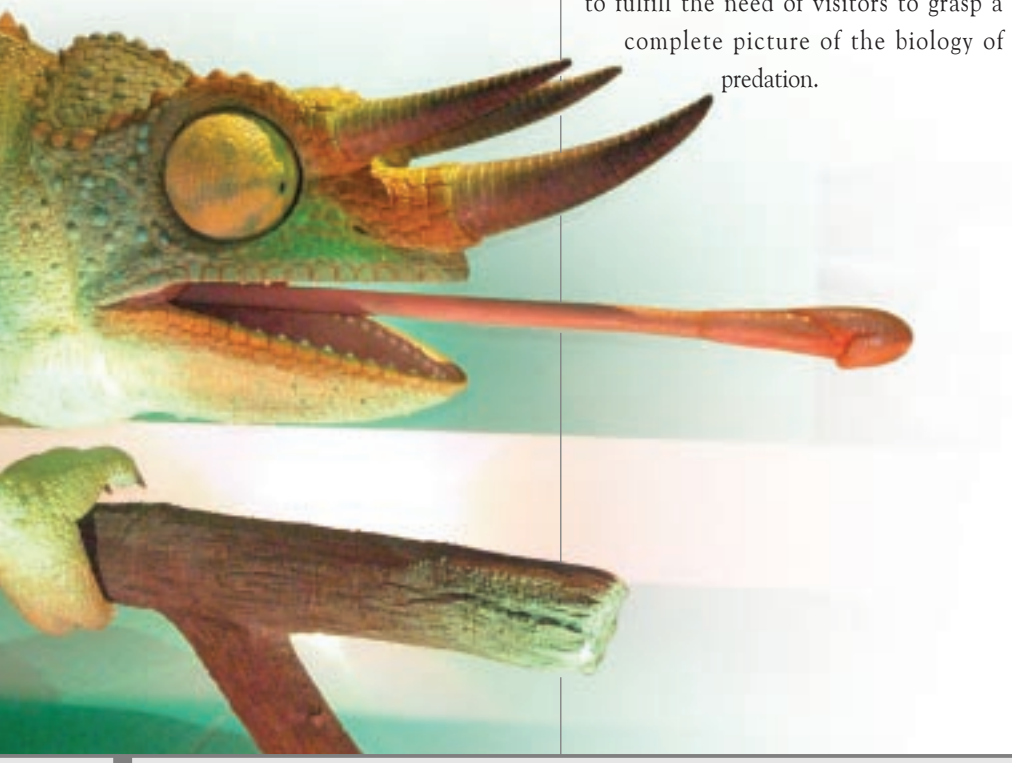
To attract more people to visit the Museum and to share the Museum's knowledge of precious stones, the NMNS prepared a very special exhibition of gemstones, showcasing inorganic precious stones and dozens of peculiar inorganic and organic precious stones. The story of each type of gem was introduced from undressed ore (including native rock or adjacent rock), untrimmed quarry stone, carved and polished stone to jewelries. To display the exhibition, the Environment Theater had to suspend all other shows for half a year. However, to make full use of its original function as a theater, specially-made programs were used to replace the original shows. The exhibition displayed over 350 pieces of precious stones, including specimens, stones and ancient jade wares collected by the Museum. The Museum also borrowed an evil-expelling sword decorated with gems from National Palace Museum(NPM) to display the magic power of precious stones. The NPM also provided a complete set of jewelries used by the nobles in Ching Dynasty. Furthermore, the Museum also borrowed hundreds of raw ore, stones and jewelries from the owners of "Top-Kang Lapidar & Jewellery Arts", Mr. Liang Chi-chang and Ms. Kang Lin-wen as well as dozens of turquoise and antique jade found in the Neolithic Age around 4000B.C., from many private collectors. Each month, jewelries of a special topic were introduced to visitors.



Special Exhibition of Predators
October 3rd, 2003 to February 8th, 2004
First Special Exhibition Room

This exhibition led the visitors to the world of predators and preys. The exhibition featured seven animated robotic models, the most notable are a full-size great white shark, an enlarged chameleon that can reach up to 6 meter long when the tongue is fully extended in simulating capturing prey, and two fierce *Velociraptors* hunted in pack. These models were selected to represent contrasting hunting strategies. Accompanied these models were many skeletal specimens showing the internal structures of these successful hunters. In addition, predators from the plant world such as Venus' flytrap and pitcher plants were also displayed. The exhibit also included relevant scientific information, such as the arms race of predators and preys, the economic of

predation, and the ecology of food pyramid, to fulfill the need of visitors to grasp a complete picture of the biology of predation.



Demonstration in Restoration Show Room—— Amazing and Solemn Porcelain Inlays
October 1st to December 31st , 2003
Circular Lobby

Porcelain inlay is a traditional craft used to "cut" glass plates and "inlay" them on the surface of plaster to decorate buildings. Originating in the Fukien and Guangtong area, the technique was brought to Taiwan over two hundred years ago by the early Han immigrants. In the early times, craftsmen usually used porcelain for decoration. Later, when colored glass became more and more popular, craftsmen also used colored glass for decoration. Nevertheless, compared to porcelain, colored glass could not withstand the summer sunshine and rain. By the 1980s, many temples switched back to porcelain.

In the exhibition, works of porcelain inlays were displayed that had been made by two brothers, Mr. Sheng-hong Jheng and Sheng-tai Jheng. The Jheng brothers specialized in porcelain inlays and koji pottery. They learned porcelain inlays at the school of Kun-fu Hong, and koji pottery from Tain-mu Lin, from the school of Ye Wang. In Taiwan, there are two schools of porcelain inlays: the first one is the school of Master Ye which came to Taiwan during the Ching Dynasty and the second one is the school of Kun-fu Hong which arrived in Taiwan after 1910. The school of Master Ye focuses on the creation of koji pottery, and the works are gentle and elegant; the school of Kun-fu Hong places more emphasis on porcelain inlays and the works are often magnificent. Hence, the works of the two brothers possess the essential qualities of the two schools. Through the

exhibition, the Museum helped visitors better understand traditional temple architecture and the art of decoration.

Decorating the Home of the Han Si Mazu——The Art of Porcelain Inlays

November 4th, 2003 to May 23rd, 2004

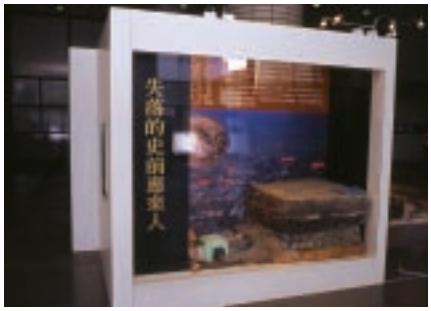
Circular Lobby

Located in the East District of Taichung City, Yuecheng Temple, a class three of registered National historic site, was built during the Ching Dynasty. The porcelain inlays made of colorful and bright glass on the ceiling were placed in 1983 when the temple was remodeled. At that time, Taiwan was very prosperous and it was a common practice to use porcelain inlays to decorate temples, and also to show the popularity of the temple. When Taiwan was struck by the earthquake of September 21st, the temple was damaged, partly because of the heavy glass inlays on the ceiling. In March 2003, the temple reconstruction project commenced. With the intention of restoring the temple back to its original look during the early years of the Republic of China, the porcelain inlays would not be put back into the ceiling. To preserve these historically significant porcelain inlays, the temple donated the 15 works to the Museum. Through this exhibition, visitors will have a better idea about the importance of the Mazu Temple in the early development of Taichung, the history and influences of temples, as well as the art of traditional temple architecture and decoration.

The Lost Prehistoric Hui-Lai Man
Since November 27th, 2003
Life Science Hall

On September 30th, 2003, the fossils of a young boy who lived 1, 300 years ago were discovered. The hot news spread throughout the country. The news was considered as important as the other news about the Guggenheim Museum setting up near the historic site. To give the public an opportunity to see the fossils, the NMNS made a four meters long stratigraphic profile and pinpointed the locations of the skeleton, grave goods, rubbish pits, pottery and lithics. Mr. Liu miao-chan used a ground control airplane to photograph the aerial view of site Hui Lai Li. On the photo, the future locations of Guggenheim Museum, City Center, City Council and National Concert Hall were marked.

This small exhibition had four themes: "Discovery of Hui Lai Li", "Cultural Heritages Under the Ground", "Prehistoric Relics Discovered", and "Watch Out! You Are Very Close to An Archaeological Site". The exhibition aimed to highlight the importance of the discovery for researches on the early development of Taichung City, as well as how imperative it is to preserve underground cultural heritages.



Time Capsule Unveiling—
The Storyof Fossils
November 6th, 2003 to July 1st, 2004
Outdoor corridor of the "Behind the Scenes Exhibition"

The exhibition showed the following specimens: (1) fossils of fascicular sea lilies that existed from Late Silurian to Early Devonian; (2) Triassic marine reptile, Nothosaurus; (3) fascinating Triassic sea lilies. They were all collected from the 2002 Munich Mineral Show. The first one was found in Morocco and the other two were found in China. Coming from different regions and different geological periods, now they are here inviting us to explore the mystery and history of their lives after hundreds of millions of years.

Science and Magic (1)—— Seeing Is Not Always Believing

December 25th, 2003 to June 22nd,2004

Second Special Exhibition Room

The special exhibition aims are as follows: (1) To reveal the scientific knowledge hidden behind the illusions of magic created by operating props used in magic shows; (2) To inspire the audience to explore visual science by surprising the audience with 'illusion' exhibits; (3) To provide visitors with a variety of visual experiences, and attract them to learn more about the production or scientific basis behind these images.

Visitors came into an "illusion room" in which images you saw might not match the real objects. Visitors could see various exhibits related to perception illusions of size, length and depth. One can put a square into a distorted window and the square would look distorted. Another must-see in the exhibition is the props of magic. Visitors can use the props and pretend to be magicians themselves. They can make someone disappear or change the weight of something. They could even use the guillotine to present scary magic shows. The last feature of this exhibition was meant to give visitors a different type of experience in enjoying artworks. Walking in a specially made gallery, visitors could see artworks or paintings that were upside down, turn the painting from one side to another, or even compose their own painting by combining different pieces.

Temporary Exhibitions in 2004

Mars Exploration Mission
January 2nd to April 30th, 2004
Hallway of 3D Theater

With information provided by National Geographic Channel, the Museum organized and designed the temporary exhibition. The special cooperation helped to give visitors a very different experience even though the information provided was identical to those of all the other exhibitions around the world under the same name. In this exhibition, all the pictures of Mars were enlarged to allow visitors to see all the details and to enjoy the incredible beauty of Mars.

The exhibition also featured interactive exhibits and activities to help visitors to gain greater understanding of Mars. For instance, through the exhibits put on the cosmic scale, visitors could understand how the gravity of Mars changed the weight of an object; and through the activity, visitors could understand the distance between Earth and Mars. During the exhibition, the Museum continued to add the latest information provided by the two NASA exploration rovers to Mars.

La Terre Vue du Ciel——Aerial Photography Exhibition
February 5th to April 18th, 2004
Plaza facing Boguan Road and the Path of Evolution

The 150 works photographed by the world-famous aerial photographer, Yamn Arthus-Bertrand present diverse images of natural life. Through these photos, the photographer hopes to remind the public that nature cannot withstand unlimited exploitation by human beings.

"La Terre Vue du Ciel: Aerial Photography Exhibition" was placed in the Evolution Path and the Plaza facing Boguan Road. The 150 photographs were selected from among tens of thousands of aerial photos taken by Yamn Arthus-Bertrand; he started to photograph the earth from the air in 1990. These works show the diverse faces of the earth and inspire our love for this land that belongs to every creature. Under different lighting, these works can even present different appearances and give viewers different feelings. Opening on February 5th, the exhibition attracted many viewers.

Dancing Butterflies, Crimson Maples— A Special Exhibition Celebrating the Miao's New Year

January 17th to July 4th, 2004

Third Special Exhibition Room

In an old folk song of the Miao people, it was said that a butterfly gave birth to 12 eggs in the maple tree. The eggs later hatched and became lions, cattle and butterflies and the ancestor of Miao —Jiang Yang. The story of the butterfly has always played an important role in the textile patterns of the Miao people. After several centuries, the butterfly is still an important symbol for the Miao culture. In addition to the pattern of the butterfly, it is also quite common to see the patterns of dragons and pheasants. In the Miao culture, dragons can have many forms, including silkworms, fish and crabs. The dragon is the god of agriculture and holds the power to control people's livelihood. The pheasant acts as the communication link between the people and their ancestors. It also symbolizes the "origin". Hence, it is quite common to see the pattern of the pheasant in various costumes and ceremonies.

Most Chinese people may not be familiar with the Miao people, but the Miao and the Han actually started contacts very early on. Through this exhibition, which showed the New Year celebration of the Miao people in Sijiang, visitors will have better understanding of the Miao people.

Behind the Scene——Collecting andPreserving Animal Specimens

February 20th to August 30th, 2004

Behind the Scenes Exhibition

Collecting and preserving specimens are the core business of museum. The Museum began its collection program in 1983 and the zoological collection now comprises 63.4% of the total collection. This collection will be used for various research purposes by local scientists and abroad as well.

In order to promote a better understanding of this crucial museum works of collecting and preserving zoological specimens to the public, the museum put up a series of "live demonstration" exhibit for this purpose. Research personals were scheduled to demonstrate the diverse techniques in handling animal specimen, which range from the tiny insects to large mammals. Visitors also have the opportunity to see various specimens preserved in different ways, some are stuffed such as birds and others are pickled in jars.

Flying Dragons—— The Search for Origins

February 26th to May 2nd, 2004

Fourth Special Exhibition Room

The special exhibition showed precious fossil specimens discovered in Liaonin Province in Northeastern China over the last years. The specimens include the earliest flowering plants: *Archaefructus sinensis*, *Archaefructus liaoningensis* and a variety of plant fossil specimens. These specimens clearly preserve the genital organs of early flowering plants. Visitors might be surprised to learn that the earliest flowering plant could possibly have been an herbal plant growing in the water.

The section of "The Missing Link" displayed various fossils of dinosaurs and birds, including feathered Dromaeosaur, *Confuciusornis*, *Caudipteryx*, *Sinosauropteryx* and four-winged *Microraptor*. The discovery of these fossils is essential for the study of dinosaur and bird evolution. In addition, the exhibition also presented fossil specimens of other fishes, amphibians and reptiles that are also members of the "Jehol Biota. To accompany these rarely exhibited fossil specimens from Mainland China, the Museum displayed various collections in the Paleontology Department and Zoology Department to link to the story. A multimedia presentation was naturally included in the exhibition.

Archaefructus sinensis

Photography Exhibition of "Species through the Eyes of Children"

February 27th to May 23rd, 2004

First Special Exhibition Room

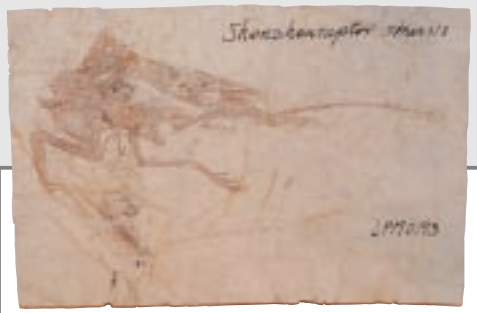
To encourage children to carefully observe and record animals and plants surrounding them, the Museum cooperated with National Geographic Magazine (Chinese version) to conduct the photography contest "Species through the Eyes of Children," in 2003. In total, 100 children's works which can be divided into three categories: observation, record and creativity. The works of children look at animals and plants from different angles and with lots of imagination; hence, the Museum also used a different way to present these works.

Dangling Leg Houses of the Miao People

- Since April 9th, 2004
- Oval Plaza

The dangling leg house is traditional architecture of the Miao people living in the mountain areas in Guizhou, Hunan and Chuandong. The bottom floor of the dangling leg house is used to raise livestock, such as cattle, swine, chickens etc. and to store fertilizer and firewood. The middle floor is used as living quarters. This floor has three rooms. The room in the center is used to worship ancestors and offer sacrifices to ancestors, hold parties and greet guests. The two rooms on both sides are designed as bedrooms, guest rooms, oven room, storage and corridors. The top floor is used as the penthouse to store grains and to hang clothes to dry. The building was originally constructed on a slope. To ensure safety, constructors must first dig two trapezoid platforms and secure the base with cobbles. The two-tier platforms help to support the house. Looking from the side, the outermost post hangs from the top floor and seems to be suspended in midair; without reaching the bottom floor, hence the name "dangling leg."

The dangling leg house exhibited by the NMNS was moved from Zhanghua Zhai, Pinglue Town, Jingping County, Guizhou, which is very close to the Qingshuei River. The ceiling of the thirty-year-old house is sieshan style. It has three stories and the total floorage is about 85 pings.



Flying Dragons——The Search for Origins(reopen)

- May 21st to September 26th, 2004
- Fourth Special Exhibition Room

Following the temporary exhibition in 2001, "The Millennium of the Dragon: Dance with Dinosaurs", the Museum presented the special exhibition of "Flying Dinosaurs" again from February to May in 2004. At the end of the exhibition, all the specimens borrowed from the Institute of Geology, Chinese Academy of Geological Sciences (CAGS), were safely transported to Beijing. As these specimens were all precious stone plates, the Museum also offered a lot of items from the collections of the Geology Department, Zoology Department and Botany Department to enrich the exhibition. After the specimens were returned to the Institute of Geology, the staff of the Museum reached a consensus in the follow-up meetings: these specimens are very important for scientific research and an exhibition with so many specimens should not be ended so soon. Hence, the Museum contacted China Geology Institute, requesting them to provide images of high resolution to replace the original specimens in the exhibition. By doing so, we were able to present the exhibition of "Flying Dinosaurs" again. Visitors might not be able to examine the original specimens, but they could still receive just as much information from the images. As the Museum does not need to pay any fee to the Institute of Geology for the exhibition, the exhibition is thus open to visitors without additional charge.

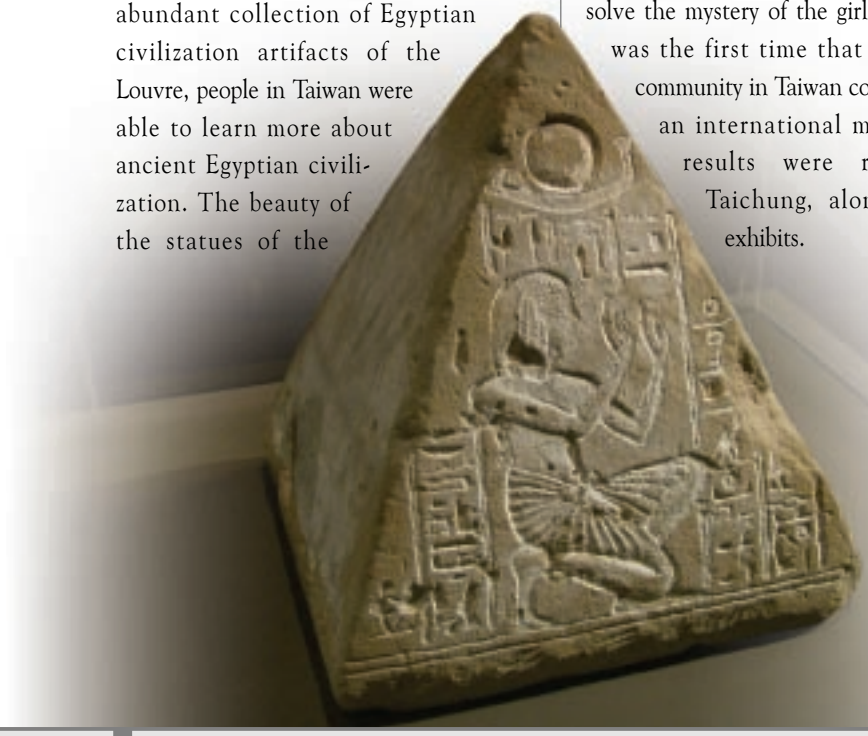
The Ancient Egyptian Art from Louvre

- April 23rd to July 18th, 2004
- Lobby of 3D Theater, B1 Mineral Exhibition Area and Environment Theater

Thanks the efforts of United Daily News(UDN) Group and Jiokuan Culture Production over the last four years, the Louvre finally agreed to the plan to tour the exhibition of its ancient Egyptian art around Taiwan for one year. The exhibition is custom-made for the public in Taiwan, showcasing over 600 items of the important collection in the Egyp-tian Gallery of the Louvre, including the five-piece colored sarcophagus of Su-times, the libationer and director of the scribes of amen in the 21st Dynasty, a marble sarcophagus from the late Egyp-tian civilization, two sphinxes, the death's letter accompanying the dead, several animal statues and a girl mummy, sacred beetle, urns to keep inner organs and hundreds of sacred relics. Through the abundant collection of Egyptian civilization artifacts of the Louvre, people in Taiwan were able to learn more about ancient Egyptian civili-zation. The beauty of the statues of the

pharaohs, and other relics, enabled the public to see real antiques, instead of merely reading books about ancient Egypt.

Thanks to the support of NTU Hospital and the Louvre, the medical professional in Taiwan was able to use advanced C T Scan facilities and professional expertise to examine the girl mummy and several animal mummies to solve the mystery of the girl's death. This was the first time that the medical community in Taiwan cooperated with an international museum. The results were revealed in Taichung, along with the exhibits.



Science on the Move

- June 9th, 2003 to March 31st, 2005
- First Special Exhibition Room

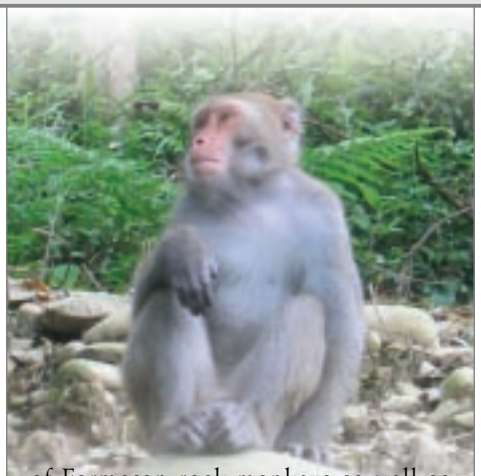
"Science on the Move" is a traveling exhibition designed by the National Science and Technology Centre (Ques-tacon) of Australia. With the support of the Australian Commerce and Industry Office (ACIO), the Museum invited Questacon to present the exhibition in Taiwan, giving the people here an opportunity to see the essential aspects of science education in Australia.

"Science on the Move" is an intere-sting and inspiring exhibition. Using physics, math, biology and environment as the themes, various interactive installations were designed to allow visitors to "learn by doing". The exhibition encouraged teachers and students to design and create their own science experiments and games. They also provided a simple and interesting in-formation board as well as an inspirational teacher's manual. Based on their own particular science backgrounds, visitors can learn different things from this exhibition. Needless to say, this exhibition is very effective as a teaching instrument.

Rediscovering Formosan Rock-Monkeys
June 4th, 2004
Circular Lobby

The Formosan rock-monkey is an endemic primate in Taiwan. According to the latest estimates, there are about 140,000 Formosan rock-monkeys in the wild. However, people in Taiwan rarely spot these monkeys unless they live or work in mountain areas.

Over the last decade, the Formosan rock-monkey has been listed as an endangered species. At the same time, there are rumors about the overpopulation of these monkeys and about the necessity to control the population of these monkeys. In fact, these stereotypes of wild monkeys are mostly fragmented and indeed unfair for a species that has stayed on this island for hundreds of thousands of years. The exhibition "Re-discovering Formosan Rock-Monkeys" presented specimens



of Formosan rock-monkeys as well as ecological information about these animals, including their body language and their origins. Through the eyes of the western people over a hundred years ago, the life of Formosan rock-monkeys and the environment on the island 100 years ago were revealed. The exhibition also helped visitors to enjoy themselves in the game called "Catch the Monkey," to view all the exhibits of monkeys and apes in the Museum.

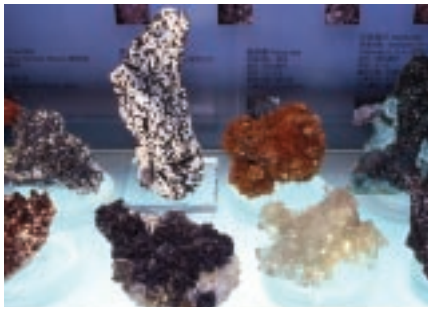
Tippi of Africa
July 3rd to August 24th, 2004
Outdoor Plaza near the Entrance at Situn Road

Organized by Animal Planet of the Discovery Channel, the photography exhibition showed the best pictures of Tippi and the wild animals. The organizer also cooperated with Taichung City Government to hold various promotional activities, including "Searching for Taiwan Tippi" and bus painting.

Tucson Show—— A Collector's Pilgrimage of Gem and Mineral
July 21st 2004 to January 9th, 2005
Corridor outside the Behind the Scenes Exhibition

The annual "Tucson Gem, Mineral and Fossil Show" held during the first week of February in Tucson, Arizona is the biggest exposition in the world of gems, fossils and minerals. Each year, hundreds of thousands of mine owners, jewelers, collectors, paleontologists and people interested in geological specimens attend the show.

Opened twenty years ago, the collection of the NMNS still has a long way to go, compared to other museums of natural science around the world, since many of them have hundreds of years of history. Visiting Tucson gives the Museum a chance to obtain world-class geological specimens within a short period. This exhibition of "Tucson Show" displayed 27 items of precious minerals and a large fossil specimen. The show was divided into five parts: (1) shape of minerals: crystal form and crystal habit; (2) home of minerals: living environment; (3) color of minerals; (4) fluorescent minerals; (5) specimen of Trilobite fossil.



The Story of Ancient People in Taichung
July 17th, 2004 to January 9th, 2005
Second Special Exhibition Room

It is generally believed that the history of Taichung City began during the 15th Century of Ming Dynasty. The Museum started carrying out an excavation in Taichung Park on June 15, 2004, and found that the East Da Dun Terrace in Taichung City has a history of at least 3,500 years, which means that there were residents in this city before the Shang Dynasty. In addition, the Museum started to excavate the relics at the Hui Lai Li Site, and discovered artifacts from the cultures of three layers; namely, Niu Ma Tou culture, Ying Pu culture and Fan Zi Yuan culture. Among them, the excavation of 17 skeletons from the iron age of Fan Zi Yuan culture was the very first discovery in Taichung City, which had great significance in the cultural history.

The special exhibition, "The Story of Ancient People in Taichung," mainly focused on the human skeletons, the specimens of animals and plants excavated from the Hui Lai Li Site. The themes of the exhibition included: (1) visit to early Taichung, (2) Taichung Park site, (3) Hui Lai Li sites, and (4) the archeological classroom open to the public. This exhibition also contained precious old maps, aerial photographies, old pictures, unearthed artifacts , animations, miniatures of the actual sites, and the puzzle games for reconstructing a pottery. This exhibition helped people to understand the history of Taichung, and its environmental development, which has the special significance in natural and cultural histories.

2004 Science Week—— Special Exhibition of Shapes

July 24th, 2004 to December 13th, 2004

Third Special Exhibition Room

By holding interesting exhibitions and activities, the Science Education Department of the National Science Council aims to popularize science education, increase people's interests in and concerns about the science, advance people's understanding of math, science and technology, help people to understand "shapes," and then develop their appreciation of beauty in the arts.

The theme of the Science Week in 2004 was "Shapes" which included humanities and arts, natural science, and applied technology. The general convener was the director of the Museum, Jia-wei Li. The exhibition was simultaneously held in Taipei (Chang Kai-Shek Memorial Hall), Taichung (National Museum of Natural Science), and Kaohsiung (National Science and Technology Museum).

In terms of natural science and technology, the themes in this exhibition were (1) natural wonders, including biology, geology, and the universe, and (2) technological inventions, including transportation, architecture, superconductors, regular polyhedrons, map projection, and lenses. The exhibition focused on the various of shapes, and was held in Third Special Exhibition Room in the Museum. The themes of natural science included the recondite helixcurves, natural beauty, the shapes, measurements of shapes, spinning round, healthy shapes, changing the Images of shapes, zonohedra, the rules in the shapes, and lens, with a total of thirty-nine exhibition items.

Volcanoes of the Deep Sea

August 1st, 2004 to December 31st, 2004

Lobby on the first floor in the Science Center

In recent years, scientists have found some unique creatures near the volcanoes in the deep sea. The discovery of these creatures helps biologists to understand more about life forms in extreme conditions.

Behind the Scene——Collecting and Preserving Plant Specimens
Since September 7, 2004
Circular Lobby

Following the successful live-exhibit of collecting and preserving animal specimens, the Museum launches a similar exhibit for plant specimens as a sequel. Professionally trained technicians demonstrated the diverse methods of handling plant collection for preservation. These techniques varied depend on the types of plant materials, for small liverworts and mosses, envelop made of acid-free paper will be sufficient; but for larger vascular plants parts, these are usually mounted on acid-free herbarium sheets and dried in oven. Still, some fungi are pickled. The exhibit also displayed various tools for collecting in the field.

An Exhibition on Bird Life of Taiwan
October 29th, 2004 to April 30th, 2005
Hallway on the Second Floor of the Chinese Science Hall and the Global Environment Hall

Birds are like lovely genies in nature. People are interested in and attracted by their colorful feathers, diverse bodies, pleasant singing, carefree flying, breeding behaviors, and strange acts. Their multi-faceted lives include a lot of unknown events. With their individual interests, bird photographers take pictures of birds at any time and in any place, and faithfully record facts of the lives of all kinds of birds.

The exhibition displayed 115 pictures of birds, taken by six bird photographers in Taiwan, Kinmen and Matsu. The pictures, containing abundant knowledge on birds, were divided into the following eight themes: (1) pairing and building nests, (2) hatching eggs and raising chicks, (3) caretaking and maturation, (4) finding food and eating habits, (5) bathing and preening feathers, (6) warning and territory, (7) routines and accidents, and (8) birds and humans. Speeches and field bird watching were also provided.

The Red Imported Fire Ants
December 16th, 2004 to March 27th, 2005
Circular Lobby

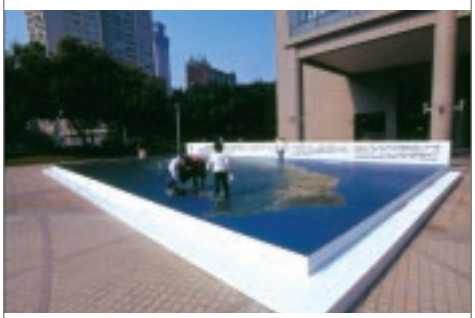
The Red Imported Fire Ant (*Solenopsis invicta* Buren) is one of the most dangerous ant species in the world. After causing damage in the United States for seventy years, these fire ants have also intruded Australia. They are now making slow inroads in Taiwan. When confronting this seemingly simple, but actually complicated issue of the Red Imported Fire Ants, the Museum undertakes the responsibilities of educating the general public, and invites Dr. Chung-Chi Lin from the Department of Entomology of National Taiwan University to assist in planning this exhibition in the hopes of first getting people's attention, and then solving the problem of the Red Imported Fire Ant.

Our Land——Our Story

November 22nd, 2004 to February 28th, 2005

The Path of Revolution and Plaza on Museum Road

This exhibition had human touch as its basis. High-tech satellite images and aerial images from peculiar angles led the audience to explore the motherland from new and multi-faced angles, and thus to better understand the land. This exhibition was divided into three major parts. The first part was a look at the motherland from space, featuring satellites images of Taiwan. The second part involved looking freely and extensively at Taiwan, and featured eight exhibition topics displaying different themes respectively: the formation of Taiwan island, biodiversity in Taiwan, natural habitant in Taiwan; population and ethnic groups in Taiwan; histories of humanities in Taiwan; industries in Taiwan; satellite remote-measured technology in Taiwan; and natural disasters in Taiwan. The third part was a bird's eye view of Taiwan, including one hundred and twenty two aerial images of Taiwan.



Fascinating Beetles & Dedicated Sato—A Special Exhibition on the Recognition of Professor Sato's Donation

December 30th, 2004 to December 29th, 2005

Behind the Scenes Exhibition

Professor Masataka Sato, a Japanese scholar, is an internationally recognized taxonomy scholar of Coleoptera, and has presented more than 500 research papers, and illustrated handbooks on beetles. His academic achievement is highly recognized by the entomology circle. His research collections, with a total of about 200,000 specimens, include the insects of Coleoptera, including Psephenidae, Lampyridae, Cantharidae, and Hydrophilidae. He has been to many countries, such as Taiwan, Thailand, Laos, China, and Japan, to collect the data. The specimens donated by Professor Sato are all attached with complete collection data, including precious and valuable duplicate specimens, which are valuable resources for further research on insects. This special exhibition displayed parts of the donated specimens, and was initiated to acknowledge Professor Sato's donation.

Theaters

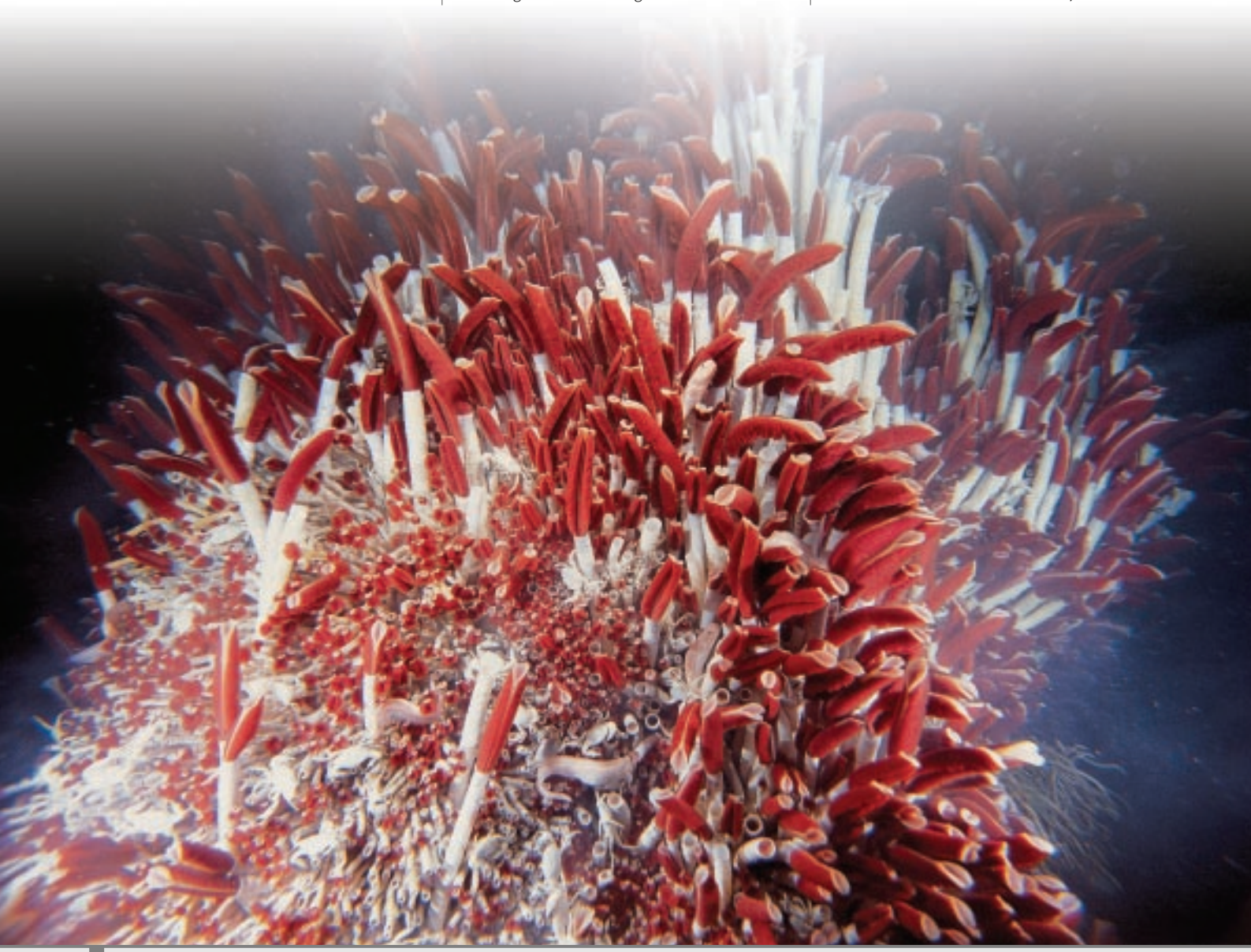
Films Played in the Space Theater

Volcanoes of the Deep Sea

The deep ocean submersible ALVIN is being outfitted with the latest sensors and navigation equipment, high resolution cameras and an extraordinary 4,000 watts of illumination. It was once tough that the deep oceans was nothing but a vast desert of endless mud throughout the eastern Pacific.

While it was difficult for scientists to understand the geological processes at work, the animals living on the chimneys were virtually impossible to comprehend. The Sub's temperature probes indicated water hot enough to melt lead, and it was laden with poisonous hydrogen sulfide, there should have been nothing alive at all. Among these amazing creatures was the worm alvinella, they danced in and out of the poison water, hot enough to boil a lobster bright red. It is called merely the Mid-Ocean Ridge, yet it is the largest geological formation on the face of the earth. The volcanic system of the deep sea is the oven of planet earth.

Billions of tiny white "Feather Dusters" filtering nutrients from the hot water emerging from the rocks. As sunlight creatures we did not think to look in the dark for life, in the same way we didn't



think to look in water hot enough to boil us alive. The most perplexing creature in this resurrection of strange life born out of the volcanoes of the Pacific is the giant tube worm.

It was truly an extraordinary place like no other on earth. It has seen a billion years of darkness, yet there was no night. It was a place without seasons, without rest, without time. At 6,000 degrees the earth's core is as hot as the sun's surface. It is this energy that gives life to the extraordinary animals of the deep sea, a world, in effect driven by the embers of a dead star still burning deep within the earth.

Amazing Journey

One of the most bizarre migrations in nature occurs on tiny Christmas Island—a thousand miles west of Australia in the Indian Ocean. A hundred million red crabs begin their annual march from woodland to sea to mate and spawn. Generation by generation, waves of monarch butterflier will migrate mothward through the United States as far as Southern Canadia. Coverging from across two- thirds of North America, as many as half — a billion sweep Southward toward central Mexico on journey of up to 2,500 miles.

Gray whales make the longest migration of any wild mammal, swimming nonstop day and night without feeding for up to two solid months, from as far north as the Arctic Ocean 5,000 miles south to Mexico. On the plains of East Africa, migration holds the promise of life and the prospect of death. Through the wet season, zebras and other grazers are sustained by rich grasses and abundant water. For two-hundred-thousand zebras it is time to begin their migration northward.

Four billion birds migrate each year from Europe deep into Africa, and similar throngs cross Asia and the Americas. To find their way, birds employ a remarkable array of techniques. Initially, instinct points them in the right directions. Where possible they follow landmarks, where there are no landmarks, they turn to compasses provided by nature. Many take their bearings from the sun's position . The billions of night flyers seem to orient to the sunset in the west as they set out.

On a planet constantly swept by relentless seasonal change in motion, life too must move in order to survive. Season by season, creature by creature, miracle by miracle, the epic journeys continue.

Coral Reef Adventure

Coral Reef Adventure follows the real-life expedition of ocean explorers and underwater filmmakers Howard and Michele Hall. The Halls guide us to the islands and sun-drenched waters of the South Pacific to document, in the biggest and best film format that exists, the health and beauty of coral reefs. On the giant screen, you'll feel like you're diving and exploring right alongside them.

Howard and Michele have been diving coral reefs for almost three decades, but in recent years, they have observed with concern the decline of their favorite reefs. Stirred to action, Howard and Michele set out for the South Pacific. They hope the images they bring back will raise awareness about the plight of coral reefs, and the health of the global oceans.

From the dazzling underwater seascapes of Australia's Great Barrier Reef to the mysterious deep ocean corals of Fiji, and from the azure skies above Tahiti to shark-filled canyons off isolated Rangiroa, the Halls visit many reefs that are flourishing and capture on film many interesting reef inhabitants. You'll laugh at the little shrimp that wants to climb in your mouth to get its own bite to eat! You'll see how reef animals rely on each other in surprising ways. You'll dive down to the mysterious deep reefs of The Twilight Zone, a place no one else has ever been. You'll swim with hundreds of grey reef sharks, then zoom through coral canyons, riding a fast current beneath the waves. But sadly, you'll also swim through vast stretches of bleached coral boneyards, and learn with the Halls how our actions may cause these devastating results.

Along their journey the Halls meet scientists and conservationists working to understand and save the reefs. In Fiji, Rusi Vulakoro guides Howard and Michele to the beautifully pristine and mysteriously damaged reefs of his country. They also dive with world-renowned ocean advocate Jean-Michel Cousteau who feels at home in the world beneath the waves. Howard and his team then dive to a dangerous 350 feet in search of deep ocean corals. For this most risky part of the trip, Howard is joined by Richard Pyle, a deep-sea ichthyologist (a self-described “fish nerd.”) Pyle knows that thousands of reef species are still unknown to science. Seeking them out is an urgent conservation priority, but it means diving to a realm seldom visited: The Twilight Zone, never before filmed in 15/70 large format .

In Tahiti, the Halls join a local chapter of Reef Check, an international organization of divers who help study local coral resources. Finally, in Rangiroa Howard searches for the huge schools of sharks known to live there. These sharks are one of the top predators, and if they still swim the waters of Rangiroa, that's a good sign for the health of the whole ecosystem. They don't find just a few, they find 300, all at once: a happy, but slightly unnerving end to their journey!

Films Played in the 3D Theater

Pirates

"Pirates", a 3-D movie produced by Iwerks Company of the United States, takes viewers into a whole new world of visual entertainment. The movie is about the adventure of a young boy named "Davey" and a group of pirates. Led by Captain Lucky, these pirates plunder valuables and treasures of other ships. To keep the treasures to his own, greedy Captain Lucky

hides all the treasures on "Pirate Island", an desert island on the Caribbean Ocean. Then he trapped Davey and all the other pirates in the Cave of the Death. Fortunately, the good triumphs over the forces of evil in the end and the greedy Captain Lucky was brought to justice

Panda Vision

In response to the environmental protection policy promoted by the Government, the Museum takes a lead in releasing the 3-D animation, "Panda Vision," produced by nWave Pictures in the U.S.A. It is hoped that by viewing this movie, the general public can learn to respect life and nature, and ponder on how best to get along with nature.

The content of the movie has its basis on the earth, a place where human beings rely on the earth, which is look at from three different angles, the sky, the ground, and the ocean. The virtually lifelike characters, such as pandas, sea elephants, sea turtles, sea horses, eels, sharks, dolphins, orangutans, pythons, and gibbons, play their roles in truthful and lively manners. This film is made for the purpose of probing into the most realistic situations where the balanced ecology on earth is being destroyed.

Dog & Bugs

"Dog & Bugs," with a length of 15 minutes, is a 3-D movie produced by the Museum and YAOX Entertainment. This movie is about a cute puppy, who seeing many bees flying in the sky, starts to imagine itself to be like any other insect flying freely in the sky. In addition to the cute puppy, characters in the story also include bees, butterfly larva, anthropomorphized butterflies and dandelions, unicorns, fireflies, and a large field of sunflowers and lilies. The story within the 3-D animation, and the Dolby Surround sound effects create excellent auditory and visual imagery, as well as an interesting and vivid 3-D virtual world.

Lego Racers

"Lego Racers" is a film about a careless and casual car racer and his crew, who attend a unique 3-D car race. At first, the leading character, who was overconfident in his skills, was extremely undisciplined, and also a troublemaker on his team. However, after attending this ever-changing 3-D car race, and frequently encountering difficulties during the process, he came to realize the importance of cooperation, changed his undisciplined attitude, and began cooperating with his teammates. Finally, they won the championship.

This film applies the principle of optics to simulate the "parallax" effect of human vision to create the 3-D effects. Wearing the 3-D polarization glasses, the audience experiences the scene emerging from the screen, in truly lifelike 3-D effects. This film is played in the 3D Theater equipped with the 70mm playing system, Dolby Surround, and a huge screen. The great field of vision and sound effects lead the audience to experience the thrills and chills of the race, and to maximize the effects of visual and sensory enjoyment.

Statistics of Theater Visitors

The Museum operates the Space Theater, 3D Theater, Bird's Eye Vision Theater, and the Environment Theater. The films about natural phenomenon and scientific knowledge were played with equipment employing state-of-art technology to guarantee the audience excellent firsthand experience. The purposes of learning and playing, as well as promoting scientific education, as a result, can all be achieved. The following is the detailed information of the showings in each theater in 2003 and 2004.

Multi-media Program on Astronomy

With the equipment in the Space Theater, the function of human resources, and to operate in coordination with the subject of Global Science in primary and secondary schools, the Museum not only produces and presents multi-media programs on astronomy, but also offers free courses on astronomy. In 2003, a total of 4,779 people attended 24 shows, while a total of 10,845 people attended 94 shows in 2004.

Space Theater

- 2003: Four films were shown, "Human Body," "Everest," "The Living Sea," and "Coral Reef Adventure." A total of 2,055 shows were presented, with a total of 331,532 visitors.
- 2004: Three films were played, "Coral Reef Adventure," "Amazing Journey," and "Volcanoes of the Deep Sea." A total of 2,322 shows were presented, with a total of 425,531 visitors.

3-D Theater

- 2003: Three films were played, "Pirates," "U Boat Adventure," and "Dog & Bugs." A total of 1,958 shows were pre-sented, with a total of 291,174 visitors.
- 2004: Two films were played, and they were "Dog & Bugs," and "Panda Vision." A total of 2,177 shows were presented, with a total of 291,529 visitors.

Bird's Eye Vision Theater

- 2003: Two films were played, "Natural Wonders," and "The Origin of Life." A total of 1,926 shows were presented, with a total of 128,584 visitors.
- 2004: Two films were played, "Natural Wonders," and "The Origin of Life." A total of 2,013 shows were presented, with a total of 115,163 visitors.

Environment Theater

- 2003: Three films were played, "Day and Night," "Four Seasons," and "Melody of Life." A total of 1,197 shows were presented, with a total of 56,345 visitors.
- 2004: Three films were played, "Day and Night," "Four Seasons," and "Melody of Life." A total of 718 shows were presented, with a total of 28,908 visitors.

Statistics of Theater Visitors in 2004

Theater / Month	Space and Astronomy Theater		Space Theater		Astronomy Theater		3-D Theater		Bird's Eye Vision Theater		Environment Theater	
2004	Shows	Visitors	Shows	Visitors	Shows	Visitors	Shows	Visitors	Shows	Visitors	Shows	Visitors
January	206	30146	150	27164	56	2982	182	21306	176	8968	0	0
February	166	31041	165	30915	1	126	175	22073	161	8441	0	0
March	209	36734	198	33795	11	2939	182	22976	171	9097	0	0
April	203	39929	198	38592	5	1337	182	24665	177	8857	0	0
May	209	37617	202	36539	7	1078	182	21521	182	9243	0	0
June	204	29451	200	28809	4	642	182	16949	168	6811	0	0
July	207	45032	207	45032	0	0	182	28118	168	14099	0	0
August	193	49535	193	49535	0	0	175	30194	181	17456	124	7829
September	195	28794	194	28524	1	270	182	14155	145	6485	151	4284
October	214	37271	212	36756	2	515	189	23603	170	8565	135	4862
November	197	36231	194	35865	3	366	175	31964	147	8203	146	6029
December	213	34595	209	34005	4	590	189	34005	167	8938	162	5904
Total	2416	436376	2322	425531	94	10845	2177	291529	2013	115163	718	28908

Exhibition Outreach

Exhibition Tours of NMNS in 2003-2004

Special Exhibition of Pandas

Year	Exhibition Date	Borrowed by	Remarks
2003	01/24~06/01	National Science & Technology Museum in Kaohsiung	
	09/25~10/19	A Date with NMNS in Matsu	
2004	01/24~03/26	I-Lan Museum of Natural History	
	07/06~07/21	I-Lan Tourism Society	

Special Exhibition of the Reincarnation of Flowers

Year	Exhibition Date	Borrowed by	Remarks
2003	09/17~12/09	Institute of Plant and Microbial Biology of Academia Sinica	
2004	01/05~03/31	Art Gallery of Fo Guang Shan, Kaohsiung	
	01/24~03/26	Kao-Yuan Institute of Technology in Kaohsiung	
	07/03~09/10	Tainan County Museum of Natural History	

Special Exhibition on SARS

Year	Exhibition Date	Borrowed by	Remarks
2003	08/13~08/27	Taiwan Semiconductor Manufacturing Company Limited	
	09/25~10/19	A Date with NMNS in Matsu	
2004	01/24~03/26	Kao-Yuan Institute of Technology in Kaohsiung	
	05/15~05/25	I-Lan Museum of Natural History	
	08/02~08/10	Hualien County Council, Scouts of China	

Special Exhibition of Time

Year	Exhibition Date	Borrowed by	Remarks
2003	02/01~02/28	Wu-Huang Palace, Tsaotun	
	09/02~09/30	Kao-Yuan Institute of Technology in Kaohsiung	
	01/24~03/26	Chiayi Astronomic Society	Donated

Special Exhibition of the Moon Rocks

Year	Exhibition Date	Borrowed by	Remarks
2003	03/15~	Regional Meteorological Center in Southern Taiwan	Donated

La Terre Vue du Ciel : Aerial Photography Exhibition

Year	Exhibition Date	Borrowed by	Remarks
2003	06/06~	Nan-Guo Elementary School in Changhua	Donated

Exhibition Tours around Taiwan

In order to promote lifelong learning, advance science education for all the people, engage in natural preservation and protection, make full use of the educational resources of the Museum, as well as expand the functions of the Museum, the Museum accepts applications from the public and private educational organizations in Taiwan for holding exhibitions outside the Museum.

La Terre Vue du Ciel : Aerial Photography Exhibition

Wildlife Photography Exhibition

Mt. Everest Exhibition

Special Exhibition of Getting Closer to Mars

Year	Exhibition Date	Borrowed by	Remarks
2003	08/13~09/14	Chiayi Astronomic Society	Donated

New Knowledge in Science

Year	Exhibition Date	Borrowed by	Remarks
2003	11/23~	Chiayi Astronomic Society	Donated

Wildlife Photography Exhibition

Year	Exhibition Date	Borrowed by	Remarks
2003	12/11~	Taipei City Zoo	Donated

Mt. Everest Exhibition

Year	Exhibition Date	Borrowed by	Remarks
2004	03/15~04/15	I-Lan Museum of Natural History	

Special Exhibition of Mars Exploration Mission

Year	Exhibition Date	Borrowed by	Remarks
2004	05/04~05/18	Changhua Senior High School	
	06/03~07/03	Yuanli Senior High School in Miaoli	
	01/24~03/26	Da Gang Junior High School in Taoyuan	

Friends on the East Coast of Taiwan: Photography Exhibition of Dolphins

Year	Exhibition Date	Borrowed by	Remarks
2004	03/26~04/07	Singang Elementary School in Changhua	
	04/06~06/30	Tainan County Museum of Natural History	

Science Week: Rivers and Oceans, Challenges for a Sustainable Taiwan

Year	Exhibition Date	Borrowed by	Remarks
2004	03/	Taichung City Chungcheng Elementary School	
	04/	Taichung City Tunghai Elementary School	

Seeing Is Not Always Believing

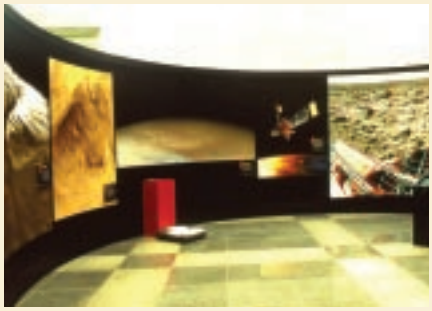
Year	Exhibition Date	Borrowed by	Remarks
2004	06/30~09/15	Shihsanhang Museum of Archaeology	
	11/20~12/10	Da Gang Junior High School in Taoyuan	

The Red Imported Fire Ants

Year	Exhibition Date	Borrowed by	Remarks
2004-2005	12/16~01/16	Taipei City Zoo	

Use of the Exhibition Tour Van of NMNS in 2003-2004

Year	Exhibition Date	Borrowed by	Remarks
2002-2003	12/20~01/02	Warner Village Cinemas, Taipei	
2003	01/03~01/18	Museum of Contemporary Art, Taipei	
	01/24~03/26	NMNS	
	04/01~05/04	National Science and Technology Museum	
	07/11~07/31	Cultural Affairs Bureau of Taoyuan County Government	
	08/01~08/21	Lotus Garden in Shinwu Township, Taoyuan County	
	08/22~08/31	Taoyuan World Trade Center	
	09/19~10/26	Taiwan Provincial Government	
	11/01~11/31	Shihsanhang Museum of Archaeology	
2004	01/23~02/08	National Museum of Prehistory	
	02/12~02/15	Cheng Kung Vocational School of Aquaculture	
	03/05~04/05	Kao-Yuan Institute of Technology	
	04/06~05/10	Tainan County Museum of Natural History	
	06/01~06/15	Yuanli Senior High School in Miaoli	
	08/02~08/10	Hualien County Council, Scouts of China	
	11/25~12/16	Taipei Lili Elementary School	



Mars Exploration Mission

Seeing Is Not Always Believing

The Red Imported Fire Ants

Updated Permanent Exhibitions

1.The original "Museum in the Making Exhibition" was renovated to become "Behind the Scenes Exhibition: Research and Collection".

Exhibitions and educational programs serve as the interface between visitors and the Museum. However, the core tasks of a museum, collection and research, are often not visible to museum visitors, as such achievements are often hidden inside the Museum. To help visitors gain a greater understanding of the collection and research by the Museum, the NMNS changed the original "Museum in the Making Exhibition" into the "Behind the Scenes Exhibition: Research and Collection" to showcase the research achievements of our researchers, including a new dinosaur discovered by the Geology Department, the reproductive pattern of starfish discovered by the Zoology Department, and the archaeological discovery of Huei-Lai Li in Taichung City by the Anthropology Department. Moreover, this exhibition also displays a great variety of specimens for museum visitors to inspect.

Oscylinder Scope exhibition

Coffin of Dikhnoun

2.The renovation of the exhibition area for "Exploring Science" in the Science Center was completed on April 23, 2004.

3.The renovation of the exhibition area for "The Mummies from the Ancient Egypt" on the second floor in the Life Science Hall was completed.

The exhibition area showcases exhibits acquired by a French-Chinese expert of ancient Egypt, including a male mummy and human-shaped coffin. Films and images are also used to present the preservation skills of ancient Egyptians. The exhibition helps visitors understand the world of the dead as perceived by the ancient Egyptians, especially the concept of afterlife; that is, the continued existence of souls after death and their relationship to the preserved bodies. The exhibition displays the visual effects of Egyptian aesthetics.

4.Renovation of "Integrated Circuits" exhibition area

The exhibition, "Integrated Circuits" was made possible by the Taiwan Semiconductor Manufacturing Company's (TSMC) donation to the Museum. In September 2003, the exhibition met museum visitors with a brand new face. The first thing one will see when entering the exhibition is a gigantic, shining vacuum tube. Surrounding the vacuum tube is the history of electronic development. The 3D theater features the 3D movie "A Tour in a Semiconductor Foundry Factory".

By operating the interactive installations, visitors will find out what are insulators, conductors or semiconductors. Inside the simulated semiconductor foundry factory, visitors get to see the production process involved in making semiconductors as well as the equipment used. They could also compare the different sizes of wafers, including 6-inch wafer, 8-inch wafer and 12-inch wafer. In the section of application, people will see microwave ovens, telephones, cellular phones, DVDs and other appliances that use semiconductors. In the section of operation and application, visitors can scan

TV and Magnet

The Age of Dinosaur gallery

chips imbedded in pets, browse e-map of the NMNS, have fun with X-BOX and operate computer simulation to do math.

5. The renovation of the exhibition area for "Stories of Human Beings" in the Life Science Hall was completed on May 3, 2004.
6. The renovation of the exhibition area for "The Fantastic World of Matter" on the fourth floor in the Science Center was completed.
7. The renovation of "The Age of Dinosaur" gallery in the Life Science Hall was completed on August 4, 2004.

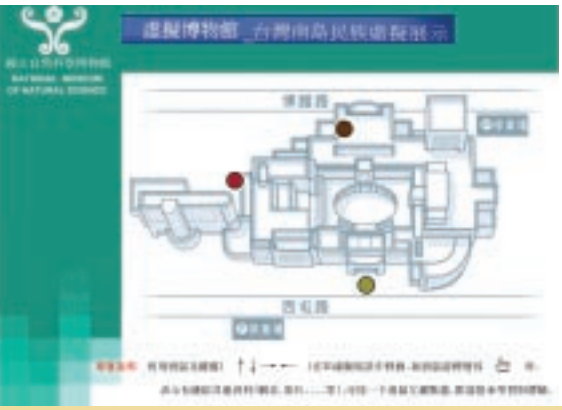
The Museum's Dinosaur Gallery was opened to the public twenty years ago and is the only permanent exhibition of its kind in Taiwan. Due to the lack of authentic dinosaur specimens and outdated scientific information, the Museum began the renovation project in 2003 to acquire new dinosaur specimens and developed a new story for the gallery. The project was completed in the summer of 2004 with four new specimens acquired from Mongolia and four full-size animated robot dinosaur models, including one seven-meter long mother *T. rex* tending her hairy baby *T. rex*. The other models are two fierce *Velociraptors* featured in the movie Jurassic Park. The new story included a new section on the evolution of birds; many precious fossils of feathered dinosaurs were displayed, accompanied by an animation on how feather developed from reptilian skin. The renovated gallery attract 100,000 visitors following the week of the re-opening.

Digital Exhibition

Digital Museum of Ali Mountain Ranges and the Cou

1.The Digital Museum of Ali Mountain Ranges and the Cou

"The Digital Culture Museum of Ali Mountain and the Cou" collects films, sounds and texts as well as research papers to describe the fundamental philosophy of the Cou people reside on Ali Mountain, which includes "origin", "center", "hierarchy", "practical knowledge" and "society as a botanical metaphor". The digital museum also presents the Cou people's understanding of the nature and their culture, and compare these ideas with the understanding of researchers with different academic backgrounds. "The Digital Culture Museum of Ali Mountain and the Cou" can be divided into five sections: (1) theme exhibition, which covers "origin", "nature", "social organization", "culture" and "the modern Cou people"; (2) special exhibition, which showcases "the hunting culture", "reconstruction of men's meeting room" and "old pictures"; (3) information search, which allows visitors to search for objects, multi-media and full texts of Ali Mountain and the Cou culture; (4) resource center, which provides bibliography for research, the Cou forum, culture map and links; (5) the natural and cultural classroom, which teaches visitors the Cou language, nature and the Cou culture. The database can be divided into two parts: species management and multi-media management. The database of species include three disciplines: ethnics, archeology and botany. The multi-media database include images, music and film. For the same object, visitors can choose to view three types of multi-media to better understand the features of the given object. The collection and data in the multi-media database are sorted according to the disciplines, creating a dendrogram. The links between objects and multi-media data help visitors gain more knowledge about the Cou culture. These links not only provide visitors with linear analysis of the object, they also lead visitors to other websites of relevant information. In the database the cultural relics of the Cou, visitors can click on "links to images", "links to sounds" and "links to films" as well as relevant specimens in the database of other disciplines. In other words, when you make an inquiry of one object, you can obtain relevant knowledge related to the object in other disciplines as well as relevant pictures, sounds and films. The interface of inquiry is divided into three: objects, multimedia and full text search of "Ali Mountain Annals". The inquiry of objects and multi-media data can be further divided into regular inquiry and combined inquiry. Thanks to the advancement of information technology, the information can reach out to be used in the curriculum of Sinmei Village elementary school in the Cou tribe in Ali Mountain.



Virtual Museum of Austronesian Cultures in Taiwan

The database and multi-media program of "The Virtual Museum of Austronesian Cultures in Taiwan" contain the following information:

(1)a map detailing the layout and buildings of the NMNS and a digital museum links to "the entrances of the Chinese Science Hall and the Global Environment Hall", "Exhibition Hall of Austronesian Cultures in Taiwan" and three 3-D models of Austronesian tribes in Taiwan., including the Cou people in Tapangu, Ali Mountain, the Rukai people in Kochapogan, Wutai and the Yami people in Ivarinu, Orchid Island. From these virtual tribes, visitors can enter the virtual dwelling to see the

objects displayed in the house and even try to use these virtual object to weave a piece of cloth. The life of the aborigines is also displayed virtually, so visitors can see how men gathered together in the meeting room, hunting activities and festivals. The website is linked to 1. Paiwan dwelling (which connects geology to Austronesian cultures; 2. Yami boat (which connects botany to Austronesian cultures); 3. Taiwan ecology (which links to Taiwan Ecology Hall); 4. nine films of the tribes; and 5. harvest festival of the Ami.

(2)the exhibition links visitors to relevant knowledge of the 50 exhibits (including costume, religious relics, agricultural tools, fishing tools, hunting tools, pottery, sculpture, bamboo ware, handicrafts and art) and provides Chinese/English information of the website and the Compact Disk.

(3)background music, films, animation and messages owned by the NMNS for better effect and to enrich the content of the project. Presented with animation, the exhibitions are usually interactive.

Research & Development

Wang, Sung-Shan

Curator and Head of the Exhibits Department

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Conclusion

In the past two years, the Museum has achieved a lot in the operation of exhibitions. In terms of quantity, we have met the expectation of the Director to organize numerous "small but warm and charming" exhibitions and changed people's stereotyped impression about the clear boundary between zoos and museums. While maintaining exhibits for best quality, we have worked to bring in large special exhibitions (such as the Ancient Egyptian Art from Louvre, Future Face and Waka Moana), found new theater films (such as "Go Mars" and "Go, Go, Flying Fish"), moved forward to digital exhibition and gradually updated several permanent exhibitions. Through these exhibitions, we can discover the world from a new point of view.

The basic tasks of the Exhibits Department are clear. In order to encourage the general public to have more understanding about natural history and cultural history, researchers of the NMNS should play the role of curator and organize exhibitions related to scientific, social and cultural development with specimens and relics collected by the Museum. Meanwhile, the NMNS would also borrow specimens or relics from museums at home and abroad according to the exhibition theme. In addition, we should make more efforts to tour our special exhibitions and use the exhibition tour van to bring exhibitions to remote areas, so that people who are not able to visit the NMNS can also participate in the exhibition and educational programs and gain knowledge about science and culture.

In the future, we should try to demonstrate the charm of individual exhibitions and inspire people to discuss various scientific and cultural issues. It is thus helpful to decide the direction of special exhibitions for the coming years in advance. For instance, the direction for 2005 is "Structure and Variation", 2006 is "Production and Reproduction" and 2007 is "Information and Life". Moreover, interest exhibition tours and large exhibition from abroad are the foundation for the Exhibits Department to develop cultural creative industry. We not only should expand the scope of our exhibitions, we should also enhance fundamental research related to museum exhibitions and make full use of our digital technology to manage "the website of exhibition knowledge management". On the website, one will find the following information: exhibition curating and design, exhibitions in international museums, case studies of exhibitions (over the years), network of exhibition communities, standard of procedures (SOP) for maintenance and construction, exhibit storage and material management, managing mechanism for exhibition tours, exhibition database (including images, summaries, statistics, tools and facilities, important designers home and abroad, panoramic system, electronic newsletters, management of exhibition-related communities) and virtual tours of bio-cultural diversity.

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