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# 認識地質公園

#### 什麼是地質公園

1999年11月,聯合國教科文組織(UNESCO)提出「促使各地 具有特殊地質現象的景點共同形成全球性的網絡」的計畫,經過 聯合國大會會議核准。這項計畫整合了世界各地具有國家性或國 際性的地景保育景點,例如:地景景點、特殊地形、地質遺產等 地質環境,皆以地質公園之名義提倡之。

聯合國教科文組織推動地質公園的目的,是爲了達到環境保護及促進小區域的經濟發展,整合自然、人文社會等環境資源使其能永續發展。提升大眾對地球遺產價值的認知以及認識地球的環境承載力。促使我們能珍惜地使用限有的地球資源,進而達到人與環境的永續。

# **About Geoparks**What is a Geopark?



In November 1999, UNESCO proposed an initiative to "foster the formation of a global network of tourist attractions with special geological phenomena" which was approved by the United Nations Convention. This initiative incorporates national and international landscape conservation sites from around the world. For example, landscape sites, special landform, geoheritages and other geological environments are included in the initiative in the name of Geopark.

The purpose for UNESCO to support geoparks is to protect the environment, propel the economy of smaller and marginalized regions, incorporate the nature, civilization, society as well as other environment resources to sustain the development of geoparks. The purpose also includes raising the public's awareness to the values of the Earth's heritage and the bearing capacity of the Earth's environments, encouraging us to cherish the limited Earth's resources, and by doing so sustain the existence of the mankind and the environment.



聯合國教科文組織
UNESCO

聯合國大會會議 UN Convention

1999.11提出

Proposal in 1999.11

使各地具有特殊地質現象的 景點共同形成全球性的網絡

Let the unique landscape sites formed a global network.

核准 Approve



地景保育景點or地質遺產 Landscape sites or Geoheritages

聯合國教科文組織(United Nations Educational, Scientific and Cultural Organization)在1999 年的11月提出「促使各地具有特殊地質現象的景點共同形成全球性的網絡」這項計畫,並獲得聯合國大會會議的核准

圖片來源: https://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/geoparks/home.html 圖片來源: http://www.globalgeopark.org/aboutGGN/51.htm

## 地質公園的價值

地質公園有地景保育、社區參與、環境教育、地景旅遊等四 大核心價值。其中地景保育是指藉由提倡地質公園的設立,保育 具有代表性、特殊性、不可取代性等特質的地景及地質遺產。接 著以地質公園為主軸讓環境教育紮根,傳遞給社會大眾相關地球 科學知識及社會文化。此外支持當地社區參與及發展地景旅遊等 活動,利用地方社區的共同參與環境與地景保育來創造認同感, 並促進區域社會經濟的發展,讓地質公園能由下往上永續地經營 與管理。



## The Values of Geoparks

Geoparks bear 4 core values which are landscape conservation, local development, environmental education, and tourism. Among those, landscape conservation means to preserve representative, unique and irreplaceable landscapes and geoheritages by means of establishing geoparks. Following that, geoparks act as the main pillar for environmental education and pass down knowledge of Earth science and social cultures to the public. Landscape conservation also supports local development, tourism and other activities, creating a sense of identity through local local development in the environment and landscape conservation, and driving the development of regional society and economy to enable sustainable operation and management in every aspect of geoparks.



## 臺灣地質公園的由來

行政院農業委員會主管「文化資產保存法」之「自然文化景觀」部分(現改爲自然地景),自民國74年7月起,訂定「自然保育年度計畫」,著手調查臺灣地區重要且珍貴的自然景觀。

民國84年開始分區登錄自然景觀及特殊地質地形現象工作, 共登錄320個特殊地質地形景點。

民國90年地景保育小組建議臺灣有31個地質遺產可優先推動成立「地質公園」。於民國99年成立「高雄燕巢月世界泥岩惡地地質公園」及「臺東利吉泥岩惡地地質公園」示範區。民國100年後,相繼加入「雲林草嶺地質公園」、「澎湖海洋地質公園」、「北部海岸地質公園」(北部海岸龍洞鼻頭地質公園、野柳地質公園)、「馬祖地質公園」、「雲嘉南濱海地質公園」及「東部海岸小野柳地質公園」。截至民國106年,全臺灣共有九處地質公園。同時爲了加深各地質公園的聯繫也建立「臺灣地質公園網絡」,協助各地評估與推動促進臺灣地質公園之間交流。

民國105年,文資法修正使得地質公園納入立法,臺灣雖然不是聯合國會員,但仍是不遺餘力地推動地質公園。讓臺灣每一個區域、縣市或鄉鎮市,都可以嘗試尋找具有獨特性、代表性、特殊性的地質、地形景點,配合國土綜合發展計畫、各縣市綜合發展計畫,發展成爲代表地方的地質公園。經濟的發展,讓地質公園能由下往上永續地經營與管理。



#### The Origins of Taiwan Geoparks

Since July 1985, the Council of Agriculture of the Executive Yuan drew up the "Annual Plan for Nature Preservation" of the segment "Natural and Cultural Landscapes" under the "Cultural Heritage Preservation Act", embarking on an investigation of critical and valuable natural resources in Taiwan.

In 1995 the Council started to register natural landscapes and works regarding special geological phenomena into different categories. A total of 320 sites with special geological structures and terrain were registered.

In 2001, the landscape conservation team proposed to prioritize the establishment of geoparks for 31 geological heritages in Taiwan. In 2010, the exemplary "Yanchao Badland Geopark" and "Lichi Badland Geopark" were established. Starting from 2011 there were the additions of "Caoling Geopark", "Penghu Marine Geopark", "North Coast Bitou-Longdong & Yehliu Geopark", "Matsu Geopark", "Southwest Coast Geopark", and "East Coast Geopark". Up to 2017, there were a total of 9 geoparks in Taiwan. In order to enhance the connections between each geopark, "Taiwan Geoparks Network" was established to help various places in Taiwan evaluate and promote the exchange between the geoparks in Taiwan.

In 2016, geoparks were included in the amended Cultural Heritage Preservation Act. Although Taiwan is not a member of the UN, it spares no effort to drive the development of geoparks. Nowadays every region, county, township and city in Taiwan can try looking for tourist attractions with unique, representative and special geological structures and terrain for the establishment of geoparks that can represent the local region while cooperating on the National Comprehensive Development Plan and county/city-level comprehensive development plans.



# 地景保育2011臺北宣言

民國100年國際地景保育會議於10月4-5日於臺北舉行,參 與會議的代表一致通過下列共識,並簽署地景保育2011臺北宣言 ,宣言如下:

- 一、地景保育國家重要議題,涉及國土安全、環境健全及臺灣對地球的責任。
- 二、爲了造福代代子孫,維持永續地景保育需具有策略性。
- 三、可採取各種視野與方法實踐地景保育,應正視其步驟與程序 問題。
- 四、地質公園強調自然地景與人類生活的地理環境間的關係,兩 者互爲表裡。
- 五、臺灣的地景保育需要國家的倡議與地方的行動,也需學習全 球經驗。
- 六、臺灣的地景保育及其網絡發展,需有法規與行政的支持。
- 七、居民投入地景保育是在地力量的引擎,有利特殊自然與人文 環境。
- 八、透過景點與地景網絡的觀摩學習,社區可發現當地地景的利 基。
- 九、推動在地的地景保育教育訓練,深化地景保育。
- 十、參與國際地景保育工作,持續推動臺灣地景保育。



## 2011 Taipei Manifesto for Landscape Conservation

The International Landscape Conservation Convention was held on October 4 to 5 in 2011 in Taipei. The attending representatives reached a unanimous agreement and signed the following 2011 Taipei Manifesto for Landscape Conservation.

- (1) The critical national issues regarding landscape conservation involves national security, environmental health and Taiwan's responsibility for the Earth.
- (2) For the sake of the generations to come, strategies are required for sustainable landscape conservation.
- (3) Various perspectives and methods can be applied to fulfil landscape conservation. Procedures and steps should be taken seriously.
- (4) The inseparable relationship between natural landscape and the lives of mankind is critical to geoparks.
- (5) Taiwan's landscape conservation needs national initiatives and the actions of local residents and it needs to learn from global experiences.
- (6) Taiwan's landscape conservation and its network development needs legal and administrative support.
- (7) The residents' involvement in landscape conservation is a driving force from local workforce that is going to benefit natural and cultural special environments.
- (8) Communities can discover the niche of local landscape by observing and learning from tourist attractions and landscape network.
- (9) Fostering local trainings on landscape conservation and furthering landscape conservation.
- (10) Participating in international landscape conservation and continuing to promote Taiwan's landscape conservation.



## 臺灣地質公園

不就是一堆沙與石頭,有什麼特別稀奇的!這可能是對地質公園不認識的遊客心聲。臺灣截至民國106年為止,總共有9處地質公園。每個地質公園都各有其獨特、無法取代的特色。

臺灣本島上目前有七個地質公園,臺東利吉泥岩惡地地質公園位於兩大板塊的交接處,易變化的地貌如同臺灣的縮影;富岡

地質公園的海岸擁有奇特地貌;燕巢泥岩惡地地質公園有全臺灣最高的泥火山;曾被九二一大地震無情地摧殘,卻浴火重生的雲林草嶺地質公園;臺灣殖民歷史開端的雲嘉南濱海地質公園;野柳地質公園中最為人知的女王頭;龍洞鼻頭地質公園突出的堅硬龍洞砂岩岬角。另外兩個離島地質公園,分別是以玄武岩為著名的澎湖地質公園;以及集地景、軍事、歷史文化為一體的馬祖地質公園。



臺灣地質公園網路標誌

#### Geoparks in Taiwan

Tourists unfamiliar with geoparks might think to themselves: "It's just a bunch of sands and rocks and I don't see anything special from it." Up to 2017, there were a total of 9 geoparks in Taiwan. Each geopark is unique with irreplaceable features.

At present there are 7 geoparks in Taiwan. Lichi Badland Geopark is located on the junction of two tectonic plates and its ever-changing landform is a miniature of Taiwan. The coast line of Fugang Geopark is a construct of a peculiar landform. Yanchao Badland Geopark has the tallest mud volcano in Taiwan. Caoling Geopark was relentlessly devastated by Jiji Earthquake but later was reborn from it. Southwest Coast Geopark represents the beginning of Taiwan's colonial history. Yehliu Geopark is known for the Queen's Head. Bitou-Longdong Geopark has rigid and protruding dragon cave sandstone capes.

The other two offshore geoparks are Penghu Marine Geopark known for its basalt construct, and Matsu Geopark which incorporates landscape, military and historic cultures.

野北部海岸 THE NORTHERN COAST 柳地質公園 YEHLIU GEOPARK



# 澎湖海洋地質公園 ●

成立時間:2003年推動,2011年加入。

簡 介:澎湖群島座落於臺灣西側的臺灣海峽,具有臺灣較古 老的火山地質景觀。因板塊碰撞所引起的區域火山活 動,造成大量岩漿溢出於澎湖海域。除了由安山岩構 成的花嶼外,由火成岩、玄武岩組成的地形以及豐富

的海洋生態是為其賣點。

## 雲林草嶺地質公園●

成立時間:2004年掛牌,2011年加入。

簡介:雲林草嶺地質公園位於雲林縣古坑鄉。是臺灣第一處 由政府單位正式掛牌的地質公園。當地的峭壁雄風、 蓬萊瀑布、石壁、壺穴等特殊自然景觀極富盛名。雖 然921大地震造成眾多地形及地貌的改變,仍有許多的

> 人士努力讓雲林草嶺浴火重生,呈現比過往更美好的 暑致。

# 野柳地質公園 ●

成立時間:2006年。

簡 介:野柳地質公園位於臺灣島的北方。由於海岸延伸的方 向與地層及構造線方向近於垂直,外加波浪侵蝕、岩 石風化、海陸相對運動、及地殼運動等地質作用的影 響,產生罕見的地形與地質景觀,如薑石、豆腐岩、 蕈狀岩、燭臺石、以及著名的女王頭等奇岩怪石。

# Penghu Marin Geopark 🔵

Initiated in 2003 and added in 2011.

Brief introduction: The Penghu Islands sit on Taiwan Strait west to Taiwan. They have an ancient volcanic geological structure as seen in Taiwan. The regional volcanic activities caused by plates collision led to a huge overflow of lava into the Penghu sea area. Besides Hua Islet consisting of andesite, the selling point of Penghu Islands include the terrain consisting of igneous rock and basalt, as well as the lively ocean ecology.

## Caoling Geopark 🔘

Initiated in 2004 and added in 2011.

Brief introduction: Caoling Geopark is located in Gukeng Township of Yunlin County, It is the first geopark in Taiwan that was officially unveiled by government authorities. It is known for majestic steep cliffs, Penglai Waterfall, balcony, pot holes, and other natural special landscapes. Although Chi-Chi Earthquake caused multiple changes in terrain and landform, many people strove for the rebirth of Caoling Geopark and it eventually came back with better-than-before scenery.

# Yehliu Geopark 🔍

Initiated in 2006.

Brief introduction: Yehliu Geoparks is in northern Taiwan. The strata and tectonic line perpendicular to the coastal line, as well as ocean waves erosion, rock weathering, the relative movement between the ocean and land, and crustal movement, together formed a rare terrain and geological landscapes including loess-doll, chessboard rocks, Pedestal Rocks, Sea Candles, the Queen's Head and other peculiar rocks.

# 燕巢泥岩惡地地質公園 ●

成立時間:2010年。

簡 介:位於高雄市燕巢區,泥岩惡地與泥火山地形是本區域

的特色,如烏山頂泥火山、滾水坪泥火山等。泥火山 為一類似火山構造之假火山,所代表地質條件為地底 下受壓的天然氣伴隨著泥、水等物質,沿著岩層間的 裂縫自地底溢出,堆積形成許多小錐狀的地形。

## 臺東利吉泥岩惡地地質公園 ●

成立時間:2010年。

簡 介:位於臺東卑南鄉卑南溪畔。特色為泥岩惡地及佈滿雨

触溝的山壁地景,利吉惡地屬於菲律賓海板塊的前緣。與它相隔的卑南溪對面,有一片寬達兩公里餘的 斷崖景觀,俗稱「小黃山」,它則是屬於歐亞大陸板 塊的一部分。有幸可於此地觀察兩個板塊的擠壓運 動。

# 馬祖地質公園 ●

成立時間:2011年。

簡 介:由北竿、東引、南竿、莒光等花崗岩錐狀島嶼組成,

受到風化及海浪侵蝕下,形成崩崖、海蝕洞等地形。 島上具有眾多軍事設施與標語,如坑道、作戰工事、 至高觀察點、據點等。當地居民的傳統廟宇慶典與閩

東式建築是具有人文氣息與獨特的景致。

## Yanchao Badland Geopark 🌑

Initiated in 2010.

Brief introduction: Yanchao Badland Geopark is located in Yanchao District of Kaohsiung City, its features are the mudstone badland and mud volcanic terrain including Wushanding Mud Volcano and Kunshuiping Mud Volcano. Mud volcano is a pseudo-volcano with similar volcanic structure. As a typical geological condition, the underground pressurized natural gas together with mud, water and other substances erupt along the cracks between the strata out of the underground and pile up to form a terrain of cone-shaped landform.

## Lichi Badland Geopark 🌒

Initiated in 2010.

Brief introduction: Lichi Badland Geopark is located on the riverside of Beinan River in Beinan Township of Taitung. It is characteristic of its mudstone badland and steep cliff filled with gullies. Lichi Badland is on the front end of Philippine Sea Plate. Opposite to Beinan River is a cliff extending several kilometers, called the "Small Yellow Mountain". It is part of the Eurasian Plate, and is a place for observing the tectonic movement and squeezing with Philippine Sea Plate.

# Matsu Geopark 🌒

Initiated in 2011.

Brief introduction: Matsu Geopark encompasses Beigan, Dongyin, Nangan and Juguang granite tapering islands. Due to weathering and ocean waves erosion, it has a terrain of collapsed cliffs and sea caves. On the islands are many military facilities and signs such as tunnels, warfare trenches, high grounds and bases. The traditional temples, ceremonies of local residents and Min-Eastern style building are unique with a cultural sentiment.

# 龍洞鼻頭地質公園 •

成立時間:2009年掛牌,2014年。

簡 介:鼻頭龍洞地質公園在民國98年掛牌,為北部海岸地質公園中的一個景點,有豐富的地形及生態資源。民國 103年,臺灣地質公園網絡會議將北部海岸地質公園分 成2個臺灣地質公園,分別為北部海岸鼻頭龍洞地質公 園及北部海岸野柳地質公園。其海岸線長度大約有1公 里,清澈的海灣內約有25科80種魚類,生態資源相常

#### 雲嘉南濱海地質公園 ●

豐富。

成立時間:2014年。

簡介:雲嘉南濱海地質公園位於雲林、嘉義、臺南三縣市沿海地區。海岸沙洲的變遷見證了臺灣歷史及地理的演變,從100多年前的潟湖沙洲演變為鹽田及魚塭,隨著停止曝曬鹽田,廢曬鹽田及濕地則是現今這裡最常見的景致,也是當地鳥類生態重要的棲息地。

## 東部海岸富岡地質公園 🗨

成立時間:2016年。

簡介:位於富岡漁港北方的海域,是東部海岸最南端的風景 據點。經由地殼抬升與海洋千年沖刷侵蝕下,造就豆 腐岩、蜂窩岩等奇特地貌。因地形和岩石在外貌及種 類上,與野柳地質公園相似,因此曾被稱為「小野柳」。民國107年底,東部海岸國家風景區管理處將它 正名為「富岡地質公園」。

## Bitou-Longdong Geopark 🔍

Initiated in 2009 and added in 2014.

Brief introduction: Bitou-Longdong Geopark was unveiled in 2009 as a tourist attraction in North Coast Geopark and it has a slew of terrain and ecological resources. In 2014, Taiwan Geoparks Network Convention divided North Coast Geopark into North Coast Bitou-Longdong Geopark and North Coast Yehliu Geoparks. Its coastal line extends about 1 kilometer. Filled with ecological resources, its surrounding bay has 80 kinds of fish under 25 families.

## Southwest Coast Geopark O

Initiated in 2014.

Brief introduction: Southwest Coast Geopark is located within the coast lines of Yunlin, Chiayi and Tainan Cities and Counties. The changes of coastal sandbars are the very proof of the evolution of Taiwan's history and geographic features, changing from lagoon sandbars of more than a decade ago to salt evaporation ponds and fish farms. After the locals stopped sun-exposing the salt evaporation ponds, a common scene here is the abandoned salt evaporation ponds and wetlands which are a critical habitat for local birds.

## East Coast Fugang Geopark 🌘

Initiated in 2016.

Brief introduction: East Coast Fugang Geopark is located in the northern sea area of Fugang Fishing Port. It is the most southern tourist attraction in the eastern coast. Due to crustal uplift and thousands of years of coastal erosion, it has a peculiar landform consisting of chessboard rocks and honeycomb rocks. It has similar appearance and types of terrain and rocks with Yehliu Geoparks, so it is also called the Small Yehliu. At the end of 2018, The East Coast National Scenic Area Administration renamed it to "Fugang Geopark".

# 利吉惡地地質公園

#### 地理位置

利吉惡地地質公園位於臺東市北郊卑南溪畔地卑南鄉,恰位 在利吉村與富源村之間,範圍東臨太平洋,西接利吉村平原地區 ,隔著卑南溪與小黃山比鄰相望。沿著臺東大橋西側通往利吉村 的鄉道往北直行,過了利吉大橋之後即進入利吉地質公園範圍。

在卑南溪畔、縣道197公路可以看到佈滿雨蝕溝的奇險山壁, 這堪稱國寶的泥岩惡地地形,便是聞名的利吉惡地地景。目前利 吉惡地地質公園預定的面積約226公頃,從保育地景出發,將富 源與利吉社區納入,兼容生態、自然和文化三重內涵,創造獨一 無二的利吉惡地地質公園。

Taitung County

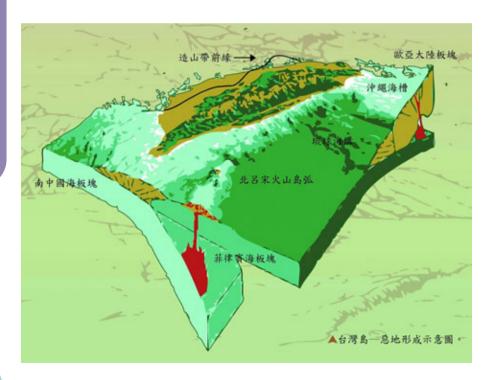
## **Lichi Badland Geopark** Location

It is located on the riverside of Beinan River in Beinan Township in the northern suburb of Taitung City, just between Lichi Village and Fuyuan Village. It oversees the Pacific Ocean to the east and neighbors Lichi Plains to the west, and is opposite Beinan River and the Small Yellow Mountain. Go along the west side of Taitung Bridge to the country roads of Lichi Village, head straight north, and cross Lichi Bridge, you will enter the perimeters of Lichi Geopark. At the riverside of Beinan River on Country Road 197, you will see steep cliffs filled with gullies. That is the landscape of Lichi Badland with a mudstone terrain dubbed as the national treasure of Taiwan. The current scheduled land area for Lichi Badland Geopark is around 226 hectares. For the sake of landscape conservation, Fuyuan and Lichi communities were included into the Geopark to cope with ecology, nature and culture and formed the unique Lichi Badland Geopark.



## 地質特殊性

臺灣是位於亞洲大陸邊緣且東臨太平洋的島嶼,因菲律賓海板塊與歐亞大陸板塊碰撞所形成,是西太平洋邊緣新生代的重要造山帶。民國45年,徐鐵良教授來到利吉村,發現這裡的地層由混亂無序的泥岩構成,原本屬於海溝的沉積物因板塊隱沒及推擠作用,使得原本沉積的層序遭受破壞,形成無層理且受剪切作用的岩層。此外,在這些雜亂無序的泥岩中夾雜許多「雜岩」,因此將這種岩層命名為「利吉混同層」,是板塊隱沒碰撞的重要證據。這種地質主要由顆粒細小且質地疏鬆的泥岩層所構成,經過雨水和地表水的沖刷,易形成險峻銳脊的惡地景象,更是記錄臺灣島形成的證據。



#### **Distinctiveness of Geological Structure**

Taiwan is an island on the edge of the Aisan Continent and neighbors the Pacific Ocean to the east. It was formed from the collision between Philippine Sea Plate and Eurasian Plate and is an important Cenozoic orogenic belt on the edge of West Pacific Ocean. In 1956, professor Tieh-Liang Hsu came to Lichi Village and found the strata here consists of orderless mudstones. The sediments originating from the trench were subject to plate subduction and squeezing and damaged the original sedimentary layers, forming strata which were orderless and subject to shear. Furthermore, these orderless mudstones were mixed with many complexes, and therefore such strata are named "Lichi Mélange" which is an important proof of plates subduction and collision. Geologically, it mainly consists of fine-grained and loose mudstone. Due to rain wash and surface water erosion, this layer is likely to form a badland and is the proof of island formation of Taiwan.



富源大峽谷(許芳萍攝) Fuyuan Canyon

## 泥岩

利吉混同層的主要地層,是由混亂無序的泥岩所構成,具有複雜的錯動和剪移,而且缺乏明顯的層理。泥岩屬於沉積岩由細小岩石碎屑組成,其顆粒大小與黏土相當,主要礦物有石英、雲母、長石、黏土礦物等等。泥岩膠結疏鬆,透水性低,易受到外力作用而有所改變。遇雨水會軟化且剝離,形成雨蝕溝;乾燥則容易龜裂崩落;這種崎嶇的土地不利耕作又容易受到雨水侵蝕坍塌,故稱它為惡地。



雨蝕溝Gully(許芳萍攝)

#### Mudstone

The main strata of Lichi Mélange consist of orderless mudstones. They have complex displacement by shearing and lack an apparent stratification. Mudstones, as part of the sedimentary rocks, consist of fine rock debris. The grains have the same size as clay and their main minerals are quartz, mica, feldspar, and clay minerals. Mudstones are loosely interconnected and less permeable by water. They are likely to change as a result of external forces. They soften and form gullies, because of rainwater. In a dry state, they are likely to crack and collapse. This type of rugged land is not suitable for farming and is likely to collapse due to rainwater erosion, which is why they are called badlands.

## 外來岩塊

當板塊運動發生時,海洋地殼的沉積物被一併翻升到陸地上,被擠壓破碎的岩石便形成雜亂混合的地層,稱為「混同層」。在利吉惡地地質公園中大部分的外來岩塊為砂岩、頁岩、砂頁岩互層及蛇綠岩系,因此獲得「利吉混同層」的稱號。在陸地上的雜亂泥岩層中會出現蛇綠岩系,表示經過地殼變動的古海洋板塊被隱沒,而在利吉發現的外來岩塊都是現在已經完全隱沒到菲律賓海板塊之下的古南海板塊所遺留的碎片。



外來岩塊Exotic Blocks(許芳萍攝)



外來岩塊特寫Zoom in Exotic Blocks (許芳萍攝)

#### **Exotic Blocks**

During plates movement, the deposits in the oceanic crust are flipped out above the land, and the squeezed and ruptured stones form an orderless and mixed strata, called "mélange". Most of the exotic blocks in Lichi Badland Geopark are sandstones, shales, interbedded sandstones and shales, and ophiolite, and hence the name of "Lichi Mélange". Ophiolite would be found in the orderless mudstone layer on the land, which means the ancient ocean plate(s) submerged in a crust movement. The exotic blocks found in Lichi are the remaining debris of ancient South China Sea plate already subducting under Philippine Sea Plate.

## 枕狀熔岩

在197號公路營區附近有個表面如一顆顆枕頭般的岩石。它 是岩漿在水底噴發時,熔岩流的表面被快速冷卻,而內部高溫岩 漿則繼續流動至衝破硬化的外殼,再被快速冷卻,如此不斷地循 環而形成。此處的枕狀熔岩是海岸山脈的火山在海底噴發時,安 山岩質的熔岩受到海水急速冷卻而形成,透露了殘餘海洋地殼被 抬升至陸地的訊息。



枕狀熔岩Pillow Lava(許芳萍攝)

#### Pillow Lava

Near the camp site next to Road 197 are a slew of pillow-shaped stones. As lava is erupted under the sea, the surface of lava stream cools down quickly, and the high-temperature lava under the surface continues flowing until it breaks the hardened surface and then it is immediately cooled down. This continuous cycle forms the pillow-shaped rocks. Andesite lava was rapidly cooled by seawater during volcano erupted on the seafloor and formed the pillow lava here, which indicates that the remaining oceanic crust were elevated above the land.

## 蛇綠岩系

在利吉混同層當中有許多不同岩質的外來岩塊,其中最特殊便是原本屬於海洋地殼的「東臺灣蛇綠岩系」,例如:橄欖岩、輝長岩、蛇紋岩、輝綠岩、玄武岩等等。利吉惡地的泥岩層當中發現大量蛇綠岩系岩石,可以推測這是古海洋板塊因隱沒碰撞作用,與海底沈積物一併被帶到到陸地上的結果。蛇綠岩系不僅是過去板塊碰撞的證據,也是研究海洋地殼的良好材料。

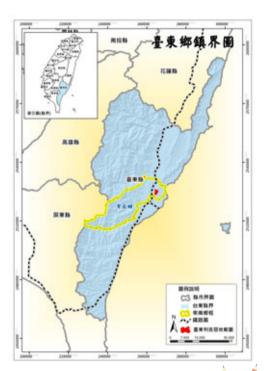


蛇紋岩 Serpentinite(許芳萍攝)

## **Ophiolite Suites**

There are many different types of exotic blocks in Lichi Mélange. The most special one is "Eastern Taiwan Ophiolite Suites", including peridotite, gabbro, serpentinite, diabase, and basalt. A large number of ophiolite suites are found in the mudstone layers of Lichi Badland. We can speculate that this is due to plates subduction and collision that brought the ancient oceanic plates and marine sediments to the land. Ophiolite suites are not only the evidence of past plates collision but also great research material for study of oceanic crust.

# 漫遊利吉惡地



**①**-①-@-\

請勿擅自撿拾或帶走在利吉泥岩 惡地地質公園範圍內的自然資源 (岩石及礦物),這片地景需要大 家的維護。

Please don't take away the natural resources (rocks and mineral) in Lichi Badland Geopark at random. These landscapes need everyone's protection.



# A Stroll in Lichi Badland Geopark



## 利吉流籠基石

早期的利吉素有「臺東第三外島」的稱呼,僅能涉水或以竹筏渡過卑南溪。在日據時代昭和7年(1932年),臺東廳於現址設置利吉鋼索流籠,是當時唯一的聯外交通道路。在社區居民積極爭取下,終於在民國83年完成利吉大橋。利吉流籠便功成身退,於民國92年被登錄為歷史建築。經過利吉大橋時,不妨張望南面的溪床,見證日據時代刻鑿石頭階梯的「利吉流籠基石」。



流籠Cable Carts(姜國彰攝)



流籠基石Base Stones Used for Cable Carts (許芳萍攝)

#### **Base Stones Used for Cable Carts in Lichi**

The early Lichi was called "Taitung's 3rd outlying island" and people could only cross Beinan River by foot or on a bamboo raft at that time. In 1932 of the period of Japanese occupation of Taiwan, Taitung Prefecture built cable carts in Lichi used as the only means of traffic to the outside world at the time. With the efforts of advocating community residents, Lichi Bridge was finally completed in 1994. Then Lichi cable carts were replaced and were registered as a historic construction in 2003. If you come across Lichi Bridge, take some time to look at the southbound riverbed for Lichi Cable Carts Base Stone with stair steps constructed in the Japanese occupation period.

## 利吉大橋紀念碑

早期利吉社區的居民受到卑南溪阻隔,因交通不便,造成建設及經濟發展落後、教育不足、人口持續外流等問題。利吉社區雖有得天獨厚的景致與農產品,卻乏人問津。經過各方人士長時間地積極爭取及努力下,利吉大橋於民國83年通車,利吉社區居民為了紀念此事,便設立利吉大橋紀念碑。



利吉大橋通車 Lichi Bridge was ope<mark>n to traffic</mark> (利吉社區提供)



利吉大橋紀念碑Lichi Bridge Monument (許芳萍攝)

## **Lichi Bridge Monument**

The traffic of early residents in Lichi Community was blocked by Beinan River. The inconvenience in traffic led to problems including the lack of constructions, economic development, and education, as well as population outflow. Although Lichi Community is blessed with beautiful scenery and abundant produces, it is rarely visited by tourists. With the long-time efforts of advocates from various trades, Lichi Bridge was open to traffic in 1994. To celebrate this event, Lichi Community residents made the Lichi Bridge Monument.

## 利吉惡地觀景平台

走過長長的木棧廊道,一眼望去盡是寸草不生、面貌猙獰的惡地地形,這裡是觀察惡地地形的絕佳位置,不僅可以看到因雨水侵蝕而形成的雨蝕溝、雨蝕谷、以及夾雜於泥岩中的各種外來岩塊。抬頭向上望去,還依稀能見到早期居民通往富源的險惡道路,稱為「摩天嶺道」,路途之凶險,仍是當地居民的深刻回憶。



遠觀摩天嶺道 Overlook Skyscraper Ridge (許芳萍攝)



利吉惡地觀景平台 Lichi Badland Observation Deck (許芳萍攝)

#### **Lichi Badland Observation Deck**

After a long walk through the long wooden corridor is a vast view of barren and sinister landscape. This is the perfect spot for observing this badland where you will see gullies and valleys caused by rain erosion, as well as various exotic blocks scattering in mudstones. Look higher and you will see the dangerous pathways to Fuyuan used by early residents, called the "Skyscraper Ridge". The local residents still remember how dangerous the "Skyscraper Ridge" was.

## 小黃山

位於卑南溪畔,附近為利吉大橋,與利吉惡地相望。小黃山是中央山脈末端的卑南礫岩層,屬於歐亞板塊一部分,經雨水沖刷侵蝕後,呈現奇岩聳立的景象,其斷崖景觀寬達兩公里,沿溪往上游綿延數公里長,雖無中國黃山的雄偉磅礴,但仍見其雅緻秀麗的韻味。



小黃山Small Yellow Mountain(張夜明攝)



小黃山 Small Yellow Mountain (劉榮三攝)

#### **Small Yellow Mountain**

It is located on the riverside of Beinan River, neighboring Lichi Bridge and is opposite to Lichi Badland. As part of the Eurasian Plate, Small Yellow Mountain is composed of Beinan conglomerate on the end of Central Mountain Range. Eroded by rain wash, Small Yellow Mountain has peculiar steep stones. Its viewable cliff extends 2 kilometers and a few kilometers more along the upstream. It might not have the grand view comparable to Mount Huangshan in China, but it has a scenic view of elegant beauty.

# 利吉遊客中心

沿著東45鄉道經過利吉大橋進入利吉聚落可見一棟位於利吉 社區的特色木質建築,即為利吉惡地遊客中心。一樓設置村辦公 室及活動中心,是社區居民舉辦活動、聯誼的場所,二樓是欣賞 小黃山美景的絕佳位置。

地址:臺東縣卑南鄉利吉村3鄰利吉路52號

電話:089-239432



利吉社區活動中心舊照 Old picture of Lichi Tourist Center (利吉社區提供)



利吉社區活動中心現況 Current in Lichi Tourist Center (許芳萍攝)

#### **Lichi Tourist Center**

Drive along the East 45 Country Road past Lichi Bridge into Lichi Village, and you will see a characteristic wooden building in Lichi Community which is Lichi Tourist Center. On the first floor is a village office and a community center where the residents hold activities and social events. The second floor is a perfect spot for viewing the beauty of Small Yellow Mountain.

No. 52, Liji Rd., Beinan Township, Taitung County 95492, Taiwan (R.O.C.)

Tel: +886-89-239432

## 巨石高台

在利吉社區人口最密集的地方,也是阿美族的部落裡,有一座觀景臺,其正下方有一顆不知來處的巨石,因而得名「巨石高台」。站在高台上,可以俯瞰整個社區,遠眺利吉惡地及小黃山、享受群山環繞的美景。在炎熱夏天,部落耆老還會於此乘涼休憩。更是部落居民彼此談心、聯絡情感的重要場所。



巨石高台Giant-Rock Observation Deck (許芳萍攝)





部落風景Landscape in tribe (許芳萍攝)

#### **Giant-Rock Observation Deck**

In the tribe of the Amis People, which is the most densely populated place in Lichi Community, there is an observation deck with a giant rock out of nowhere beneath the deck, and hence the name "Giant-Rock Observation Deck". Standing on the deck, you can overlook the whole community, Lichi Badland and Small Yellow Mountain, and enjoy the scene of beauty surrounded by plentiful mountains. In summer the elderly in the tribe would take a rest here away from the blazing sun. There is also an important place for the tribe people to converse and maintain relationship.

# 富源觀景平台

在利吉社區人口最密集的地方,也是阿美族的部落裡,有一座觀景臺,其正下方有一顆不知來處的巨石,因而得名「巨石高台」。站在高台上,可以俯瞰整個社區,遠眺利吉惡地及小黃山、享受群山環繞的美景。在炎熱夏天,部落耆老還會於此乘涼休憩。更是部落居民彼此談心、聯絡情感的重要場所。



富源觀景平台Fuyuan Observation Deck(許芳萍攝)



<mark>觀景平</mark>台景緻-都蘭山(灣) Landscape -Doulan Mountain (許芳萍攝)



觀景平台景緻-綠島 Landscape -Green Island (許芳萍攝)

# **Fuyuan Observation Deck**

Fuyuan Observation Deck is roughly located at 56th kilometer on 197 Country Road. It is a place with a wide viewing angle for you to overlook the scenery, including the dim-looking Dulan Mountain, Dulan Bay with deep blue water, the dim outline of Green Island, winding Beinan River, majestic Small Yellow Mountain, and the night Taitung City. If the sky is clear, you'll have a chance to see soaring crested serpent eagles and crested goshawks.

# 富源生態步道

富源生態步道擁有豐富的自然生態,更是俯瞰利吉惡地與小 黃山的私房景點。沿路上有各種民俗植物,如,無患子、黃藤、 刺竹、香茅等,還有機會於清晨、黃昏見到臺灣特有種-臺灣野山 羊的蹤跡。如果胸懷挑戰及冒險的熱情,這裡充滿原始及野性的 生態步道絕對不會讓人大失所望。



**"""** 

**Fuyuan Nature Trail** 

Fuyuan Nature Trail has a lively natural ecology and is a secret spot for overlooking Lichi Badland and Small Yellow Mountain. Along the Trail are various herbal plants such as sapindus, yellow rotang palm, thorny bamboo, and lemongrass. You might also have a chance to see Formosan Serows at dawn or dusk. If you want have an adventure, you will not be disappointed at the primitive and natural trail here.

歷

# 歷史人文與特色產業

# 阿美族歷史與文化

阿美族人居位於花蓮、臺東、屏東三縣之地。恆春的阿美族人遷徙來到臺東這片土地定居,因為懷念屏東故鄉「Liki社」,便將此地亦取名為「Liki Liki」。在日治時期昭和十二年十月(1937年)曾一度因地勢關係而改名為「上原」,在臺灣光復後,便改回「利吉村」。

阿美族是農耕漁獵民族,由女兒繼承家業,男子行贅婚的母 系社會,婦女是一家之主,男子則掌理以部落共事務為核心的集 會所,內有嚴謹的年齡階級。

阿美族的豐年祭在每年水稻收穫後期間舉行,由各部落分別舉行,天數從昔日的七天簡化為現在的三天。而歌舞是豐年祭活動的重心,藉由歌舞同歡達到聯誼、訓練及薪火相傳的目的。活動包括部落少年的成年禮競技、舉族同樂慶豐收、未婚男女擇偶的情人之夜等等。

利吉部落的海祭,依然遵循傳統形式,年齡階層的男子們夜 宿海邊,青年學習部落傳統生活技能及年齡階層的服從觀念,以 及敬老尊賢的倫理美德。



利吉部落捕漁祭(賴峻峰攝) The sea festival in Lichi tribe

# Historic Culture and Characteristic Industries History and Culture of the Amis People

The Amis People live in Hualian, Taitung and Pingtung Counties. The Amis People in Hengchun (of Pingtung) migrated to Taitung. They missed their birthplace "Liki Village" and therefore they named this new habitat in Taitung to "Liki Liki Village". In October 1937 of the Japanese occupation period, the Village was named to "Shangyuan". After Taiwan was liberated, it was renamed to "Lichi Village".

The Amis People is a farming and fishing tribe of a matriarchal society, where males are married into the females' family. The females take charge of the family and the males controls the tribes' assembly which centers on tribe affairs. The assembly members are strictly ranked according to their respective ages.

The Amis People's annual Harvest Festival is held after rice harvest by each tribe. The Festival has been shortened from 7 days to 3 days. Dance is the center of the Festival. It is the medium to fulfill the purpose of maintaining relationship, training and passing down traditional values. The activities include teenage boy's adult ceremony and competition, a harvest festival for the whole tribe, and a night of romance for unmarried males and females to choose their couple.

The sea festival in Lichi tribe still follows the tradition. Male members of different ages and ranks stay the night at the seaside. Teenage learn traditional skills, ethics and obedience to the elderly.



利吉部落豐年祭(賴峻峰攝) Harvest Festival in Lichi tribe



利吉部落豐年祭跳舞(賴峻峰攝) Dancing at Harvest Festival in Lichi tribe

# 王登科 (1898-1958)

王登科,日治時期臺南州北門郡學甲庄新寮人(今臺南市北門區),明治31年(1898年)出生。從學甲公學校畢業後,他曾在高雄淺野株式會社(今臺灣水泥公司前身)高雄工廠工作。於大正13年(1924年)到臺東,與臺南人林全福學習得製糖及甘蔗契作的技術,隔年跟臺東製糖合作,向原住民承租土地,成立王農場(1930年更名為國本農場)。

王登科在製糖會社具有舉足輕重的地位,負責供應工廠所需原料,並在移民與製糖會社間扮演仲介角色,提供資金借貸,其所經營農場迅速擴大,由卑南擴展到旭橋、白井、檳榔、加路蘭、旭村、初鹿、大原、大武、里壠等地。

昭和15年(1940年),王登科於卑南修建國本農場(卑南王家三合院),堪稱臺東建築史之經典建築。其妻為鄭絹,育有四子,其長子王俊懋、次子俊潓,繼承父業經營農場。



國本農場Guo-ben Farmland(許芳萍攝)

# **Deng-ke Wang (1898-1958)**

Deng-ke Wang was born in 1898 (Japanese occupation period) in Sinliao aera of Shuejia Village in Beimen Region of Tainan. After graduating from Shuejia Public School, he worked at Kaohsiung plant of Kaohsiung Asano Company (which is the current Taiwan Cement Corporation). In 1924 he moved to Taitung and learned how to make sugar and plant sugarcane from Quan-Fu Lin. The next year he collaborated with Taitung Sugar Manufacturing Company to leased lands to aboriginals and established Wang Farmland (which was renamed to Guo-ben Farmland in 1930).

Deng-ke Wang was a critical character in the sugar manufacturing company. He was in charge of supplying materials required by the plant, and played a mediator role between immigrants and the sugar manufacturing company, lending funds. His farmland grew quickly and expanded from Beinan to Shiuchiau, Baijing, Binglang, Jialulan, Shiutsuen, Chulu, Dayuan, Dawu, Lilong and other places.

In 1940, he built the Guo-ben Farmland in Beinan (called "the Wang's House in Beinan") which is regarded as a classic construction in Taitung's construction history. His wife was Juan Cheng who gave birth to 4 children. The eldest son was Chun-Mao Wang, followed by his brother Chun-Huei Wang. These sons succeeded the Farmland from their father.



國本農場Guo-ben Farmland(許芳萍攝)

# 王俊懋 [ (1923-1981)

王俊懋,卑南國本農場王登科長子,生於大正12年(1923年) ,畢業於臺南商業學校。其妻為王邱月嬌,育有三子四女。王俊 懋曾參任多要職,如:卑南鄉農會理事長、代表會主席、臺東縣 水利會評議委員、臺東縣租佃委員等職。已連任兩次卑南鄉鄉長 ,最為廣為人知。民國55年,臺東鳳梨生產過剩,造成農民經濟 收入不佳,王俊懋到處積極奔走,替農民爭取補助。最後藉由協 助大山發食品公司收購鳳梨,並加工製成罐頭,以解決農民的困 境。

此外,任內期間完成卑南鄉農村電化、簡易自來水、產業道路等重要工程,使得偏遠鄉鎮村內有水有電可用、有道路可通。 利吉社區居民為感念王俊懋鄉長的善心與貢獻,自主發起籌款, 立碑紀念。



王俊懋鄉長紀念碑Monument for Chun-Mao Wang(許芳萍攝)

# Chun-Mao Wang (1923-1981)

Chun-Mao Wang was born in 1923 as the eldest son of Deng-ke Wang, founder of Beinan Guo-ben Farmland. He graduated from Tainan Business School. His wife was Yuei-Jiao Chou who gave birth to 3 sons and 4 daughters. He was on multiple critical job posts, such as Beinan Farmers' Association president, chairman of local council, member of advisory committee to Department of Irrigation and Engineering of Taitung County, and member of tenancy committee of Taitung County. He was known for being Beinan Township Chief for two terms. In 1966, there was an overproduction of pineapples in Taitung that led to insufficient income for farmers. Chun-Mao Wang went everywhere seeking subsidies for them. Eventually Ta San Fa Food Industrial Corp came to the rescue. The company purchased the pineapples, have them processed and canned and finally saved the farmers from their adversity. Additionally, Chun-Mao Wang completed critical constructions in his term, including power supply setup for Beinan Township, a simple running water supply system, and industrial roads construction. He made water, electricity and traffic available for distant villages and towns. The residents of Lichi Comunity raised funds and made a monument in memory of his kindness and contribution.



利吉天主堂Lichi Church(利吉社區提供)

# 池作基神父 (Rev. Meinrad Tschirky 1930-1992)

池作基,1930年生於瑞士沙爾卡恩斯小鎮,1950年攻讀神學並加入白冷會,民國46年初到臺東傳教,即協助在鹿野鄉和平部落天主堂的紀守常神父,同時學習阿美族的語言及文化。民國48年,他被調往臺東市馬蘭堂區任副堂,向阿美族人宣教,並至大橋、富岡、利吉、加路蘭等地傳教。經過兩年,調往東河堂區,至去世前一直在東河堂區擔任主任司鐸職;期間,雖另有他職,仍兼堂東河堂區。

池作基熱愛阿美族,更有阿美族姓名「馬耀」,故阿美族人 均稱其為「馬耀神父」。民國55年,與其他神父在教區內推廣儲 蓄互助社,至民國82年,仍持續在經營,以改善原住民的經濟及 生活。民國81年,池作基耳疾惡化,病逝臺東市聖母醫院,葬於 臺東小馬天主教堂。



池作基神父之墓 Grave of Father Rev. Meinrad Tschirky (許芳萍攝)



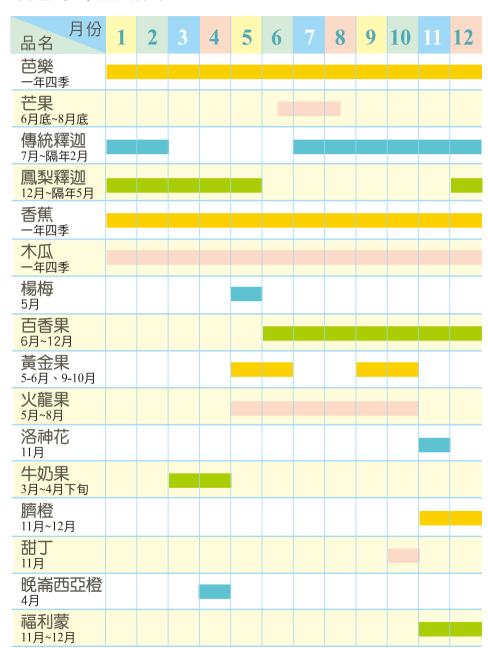
小馬天主教堂Hsiao-ma Church(許芳萍攝)

# Father Rev. Meinrad Tschirky (1930-1992)

Meinrad Tschirky, born in 1930 in a small town in Switzerland, studied theology and joined Bethlehem Mission Society in 1950. He set foot on Taitung in 1957 as a missionary and assisted Father Giger Alfred at the catholic church of Ho-Ping Tribe in Luye Township. In the meantime, he learned the language and culture of the Amis People. In 1959, he was transferred to Malan Chapel in Taitung City to conduct mission to the Amis People and to Daciao, Fugang, Lichi, and Jialulan regions. Two years later, he was transferred to Donghe Chapel. Until he passed away he had been a priest to Donghe Chapel. He had other roles in the Chapel during his term but he was still managing Donghe Chapel.

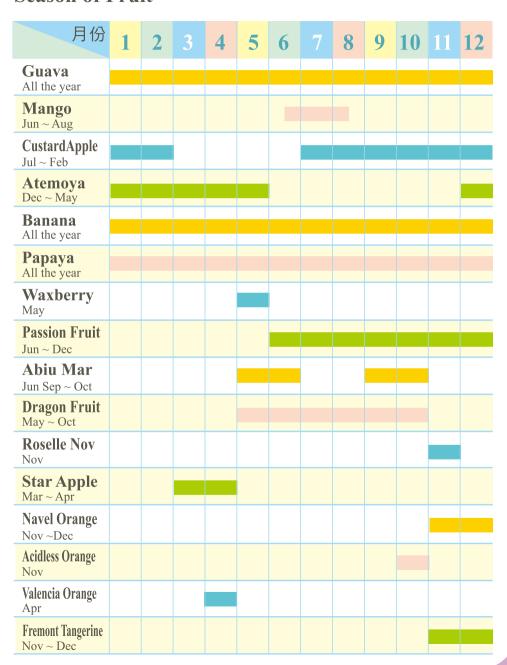
He was affectionate for the Amis People and he even had an Amis surname called "Ma-Yao", and therefore the Amis People called him "Father Ma-Yao". In 1996, he established a deposit savings support office with other Fathers in the region. Until 1993 he had been running this office to improve the aboriginals' economy and livelihood. In 1992, his ear disease deteriorated and he passed away at Saint. Mary's Hospital Taitung and was buried in Hsiao-ma Church in Taitung.

# 利吉惡地特色農產 利吉水果產期表 ==



# 歷史人文與特色產業 Historic Culture and

# Special agricultural products in Lichi badland Season of Fruit



# 芭樂

在利吉惡地的農產品中,最有名的便是惡地芭樂。除了農民 用心栽種與照顧之外,再加上偏鹼性的惡地土壤及富含鎂、鈣等 微量元素,讓惡地芭樂口感特別清脆香甜,便有「惡地得佳果」 的美稱,是到訪利吉惡地不容錯過的美味。

### Guava

The most well-known fruit among the produces of Lichi Badland is the Badland Guava. The farmers grow and cultivate the Guavas with care. Additionally, the slightly alkalic badland soil that is rich in magnesium and calcium makes the taste of Badland Guavas exceptionally crispy and sweet, as in a local saying that goes: "Badland grow great fruits". Be sure to taste Badland Guavas when you visit Lichi Badland.



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# 芒果

利吉惡地出產的芒果外觀結實飽滿,本身的果肉金黃多汁, 不時散發可口誘人的香甜氣息。這是利吉特殊土質及果農細心呵 護的成果,在芒果栽種階段,要替未成熟的芒果套上果袋,避免 風吹日晒雨淋;採收後的芒果要小心存放並蓋上「被子」,讓它 們自然熟成,宛如照顧孩子般地用心,才有品質絕佳的惡地芒果。

# Mango

The mangoes from Lichi Badland look thick-fleshed. The golden yellow flesh is juicy and emits a tasty and luring sweet scent. That is all attributed to Lichi's unique soil and farmers' deliberate care. In the growing phase the farmers have to cover the immature mangoes in fruit bags to avoid them from sun burn and rain. After harvest, the mangoes will have to be stored carefully and covered with "blankets" to let them mature, like the care you would give to a child, to grow top-quality Badland Mangoes.



芒果Mango(侯水源攝)

# 百香果

利吉惡地出產的滿天星百香果外觀光亮偏紅,表面有著如同 繁星般的白斑點;其酸度較其他品種的百香果低,甜度高且香氣 溫潤,適合怕酸的消費者嘗試直接食用,也可製成涼拌醬汁、果 醬、水果茶等料理。百香果屬於後熟型水果,建議放置到表皮微 縮皺,品嚐起來風味更佳。

## **Passion Fruit**

The Starbright Passion Fruits from Lichi Badland look glossy and somewhat red with countless star-like white dots scattering across the surface. It is less sour than other types of passion fruit but sweeter with a mild scent. It is perfect for those who wouldn't try sour fruits. It can be made into a seasoning sauce, jam, fruit tea, etc. Passion fruits take a little more time to mature so it is recommended to store them until you see the surface slightly crumpling and that is when they taste better.



# 紅藜

紅藜一直以來都是原住民的傳統主食。民國97年,臺灣原生種的紅藜被正名為「臺灣藜」。利吉惡地因土壤關係,種植成效良好。紅藜本身含有豐富的蛋白質、胺基酸、鈣質、鐵質及膳食纖維,甚至具有九種人體無法自行合成的必需胺基酸,是營養價值極高之穀物。

# Red Quinoa

Red quinoa has been a primary traditional food for the aboriginals. In 2008, this indigenous fruit in Taiwan was named to "Taiwan red quinoa". The red quinoas grow well thanks to the soil from Lichi Badland. Red quinoas have rich protein, amino acids, calcium, iron, dietary fiber and 9 essential amino acids that the human body cannot make on its own. Red quinoas are a highly nutritious type of crop.



紅藜Red quinoa(曾怡潔攝)

# 南瓜

南瓜富含大量的維生素及營養物質,可預防和抑制癌細胞生長。此外,南瓜具有微量元素鈷和鋅,可構成紅血茄及維持紅血球的成熟,因此有「南瓜補血」的說法。南瓜的食用方法多樣,可切塊蒸煮,或是料理成南瓜派、南瓜濃湯、南瓜煎餅、南瓜粥等等,帶皮食用,可保留較豐富的膳食纖維,幫助排便。

# **Pumpkin**

Pumpkins have rich vitamins and nutrients and can prevent and inhibit the growth of cancer cells. Furthermore, pumpkins have minor cobalt and zinc that build red blood cells and maintain the cells' maturity, and therefore there is a saying that pumpkins help generate blood. There are many ways to eat pumpkins. You can chop or steam them, or make them into pumpkin pies, soup, pancake, porridge, etc. You can eat a pumpkin with its skin which contains abundant dietary fiber that helps defecation.



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# 臍橙

臍橙並非臺灣原生的水果,是在日治時期引進嘗試栽種。臍橙的外觀有一個類似人類肚臍的疤痕,是因為未發育的副果同時生長在果實裡的緣故。臍橙比一般甜橙稍大,其果皮厚容易剝,果肉是金黃飽滿、無種子且口感細緻,便是臍橙被果農喻為「橙界之王」的主因。

# **Navel Orange**

Navel oranges are not an indigenous fruit to Taiwan. They were introduced in the Japanese occupation period for trial growing. Navel oranges look like they have a belly-button-like scar because they have a sub-fruit that grows simultaneously in themselves. Navel oranges are larger than average oranges. They are easier to peel. They have golden juicy flesh. They are seedless and taste delicate. That is why farmers call them the "king of oranges".



臍橙特寫 Zoom in navel orange (許芳萍攝)



臍橙Navel orange(許芳萍攝)





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