

## Hong Kong's first dinosaur-era fish- *Paralycoptera*

香港首次發現恐龍時代  
的副狼鰭魚化石

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# Re-discovery and study

## 重新發現與研究

- Summer Research Fellowship (SRF)

### 暑期研究

- Review of the Stephen Hui Geological Museum fossil collection and vertebrate fossils from Hong Kong

許士芬地質博物館化石收藏與香港有脊椎動物化石檢閱

- Earth Sciences BSc Final Year Project

### 地球科學系畢業專題研習

- Hong Kong's first Mesozoic fish: osteological description and implications

香港首個中生代魚化石研究

# Re-discovery and study

## 重新發現與研究

- PeerJ open-access journal article

科學期刊 PeerJ

- A specimen of *Paralycoptera* Chang & Chou 1977 (Teleostei: Osteoglossoidei) from Hong Kong (Guangdong, China) with a potential Late Jurassic age that extends the temporal and geographical range of the genus

香港首個中生代魚化石研究

- (晚侏羅紀副狼鰭魚(由張和周於1977首次描述))

**HKU SHGM L275**



**1cm<sup>2</sup>**

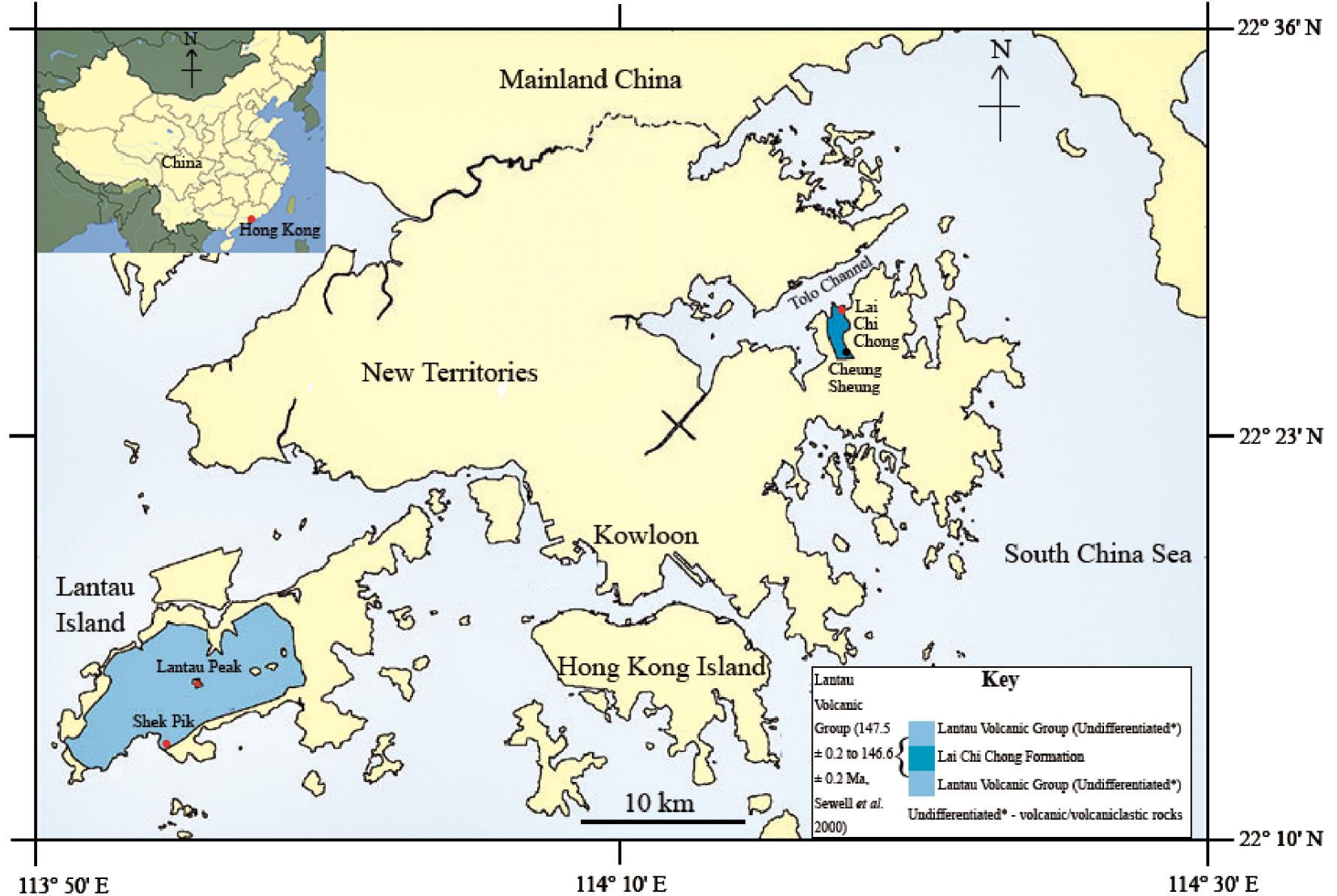
Credit: Mr. Tse Tze-kei  
相片由謝子旗提供



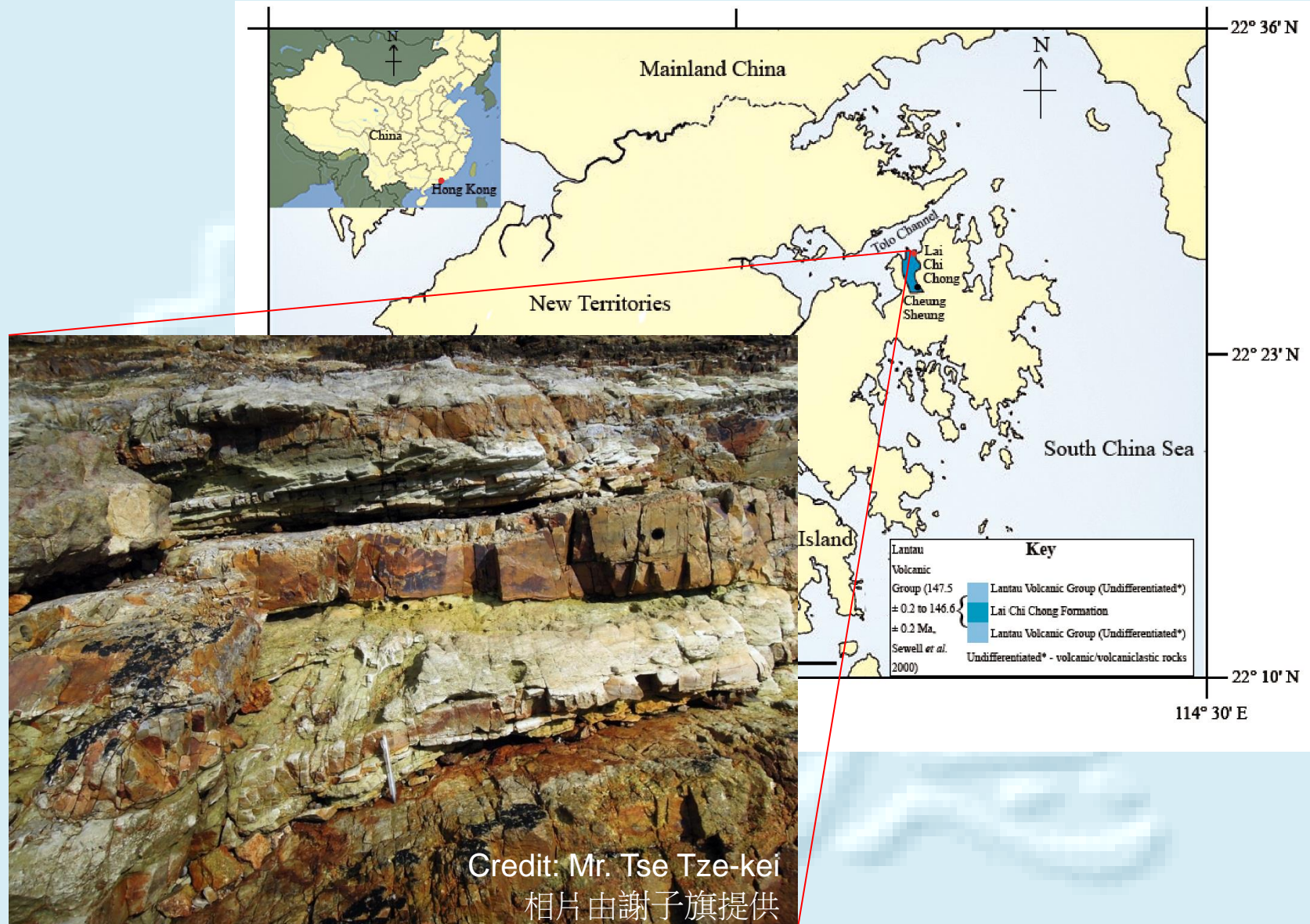
Credit: IVPP

相片由古脊椎動物與古人類研究所提供

← 1cm →



- Lived in mostly tranquil **shallow freshwater lakes** near areas of active volcanism 住在近火山活動地區的平靜淡水淺湖。
  - But, the lakes experienced episodic catastrophic events 但湖泊會受火山爆發和地震影響。

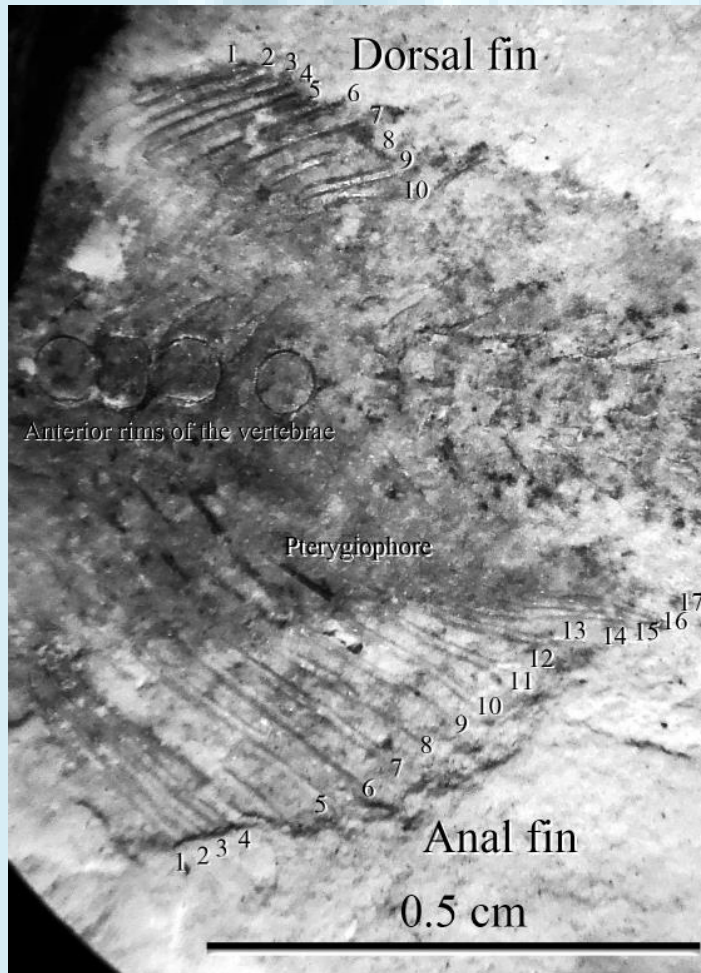


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# Fossil study 化石研究

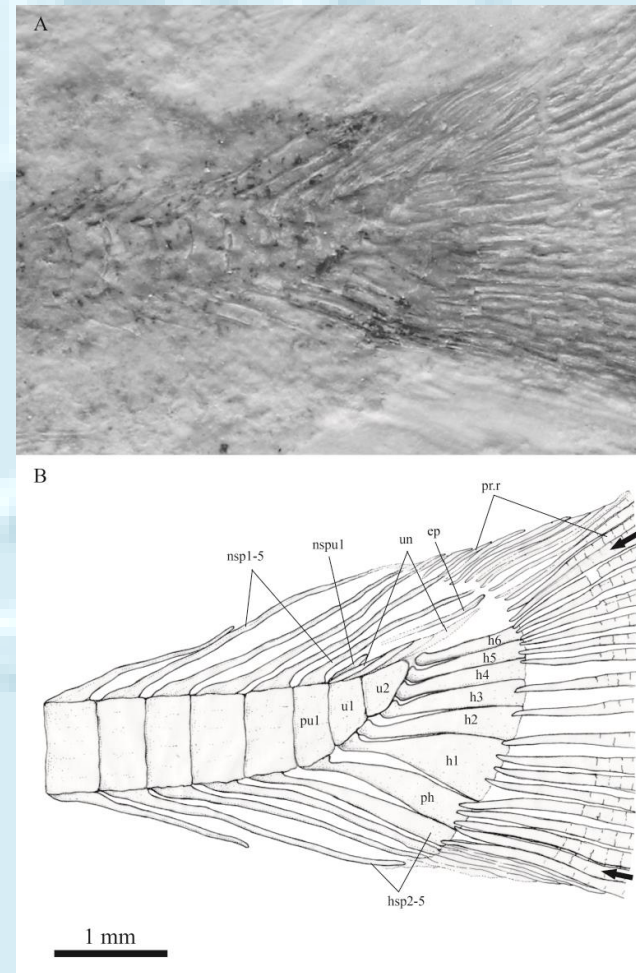
## Anal and dorsal fins

### 臀鰭和背鰭



## Caudal skeleton

### 尾部骨骼





# Fossil identification 化石鑑定

Anatomical features were compared with similar specimens and existing publications.

記錄特徵後進行比較研究

真骨魚組 SUBDIVISION TELEOSTEI MÜLLER, 1846

骨舌魚超目 SUPERORDER OSTEOGLOSSOMORPHA GREENWOOD *ET AL.*, 1966

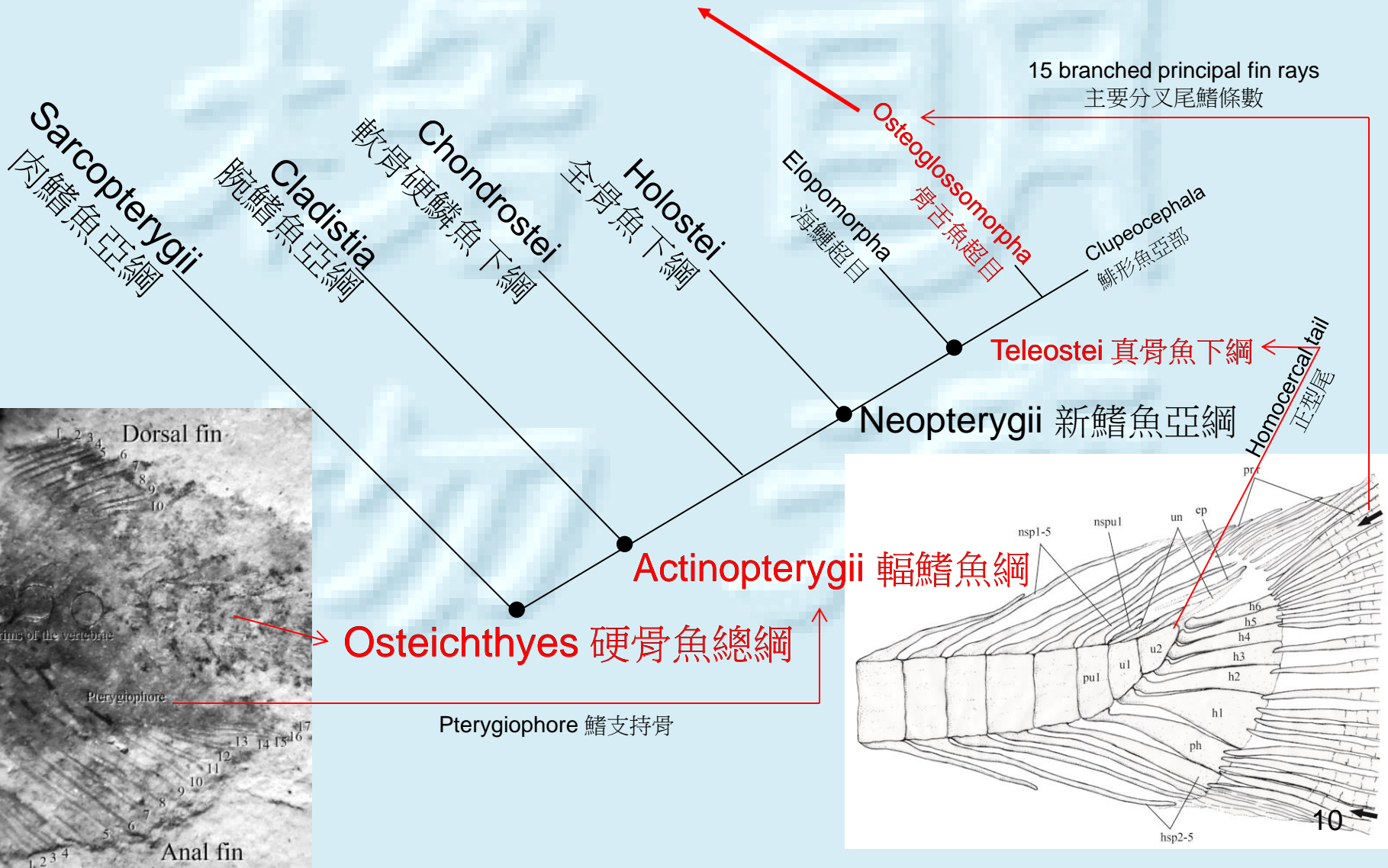
骨舌魚目 ORDER OSTEOGLOSSIFORMES REGAN, 1909

副狼鰭魚屬 GENUS †*PARALYCOPTERA* CHANG & CHOU, 1977

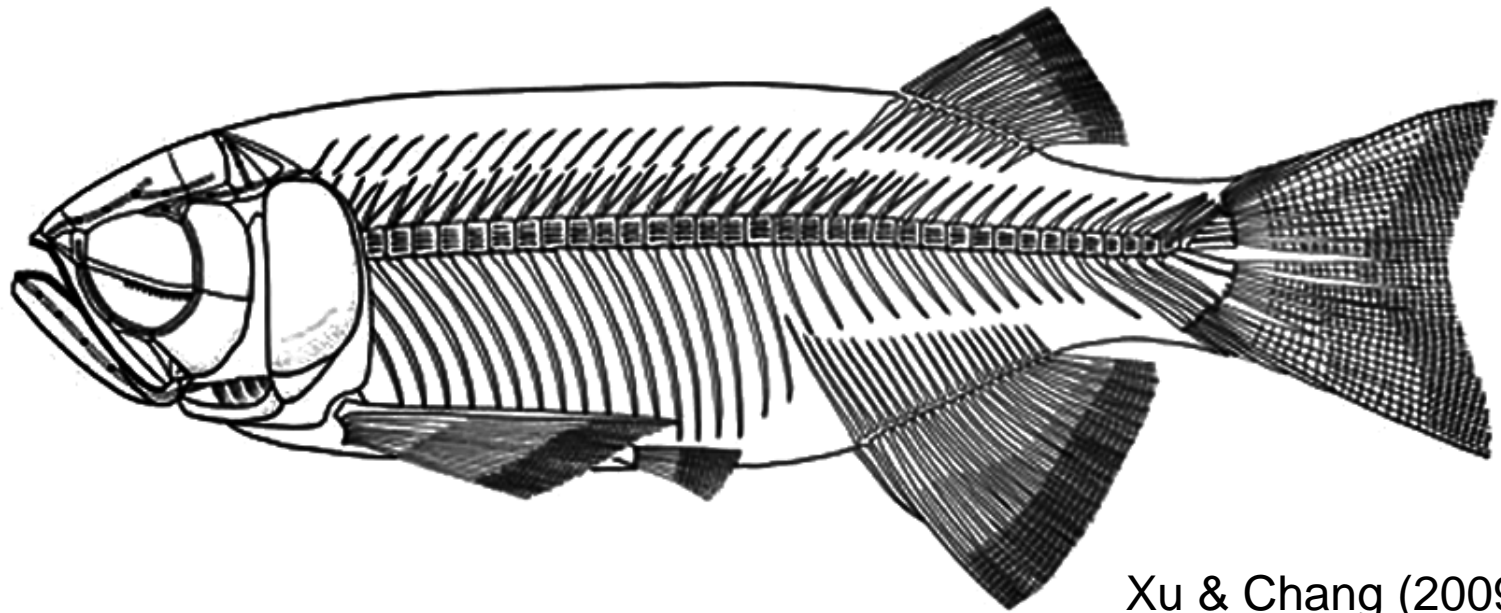
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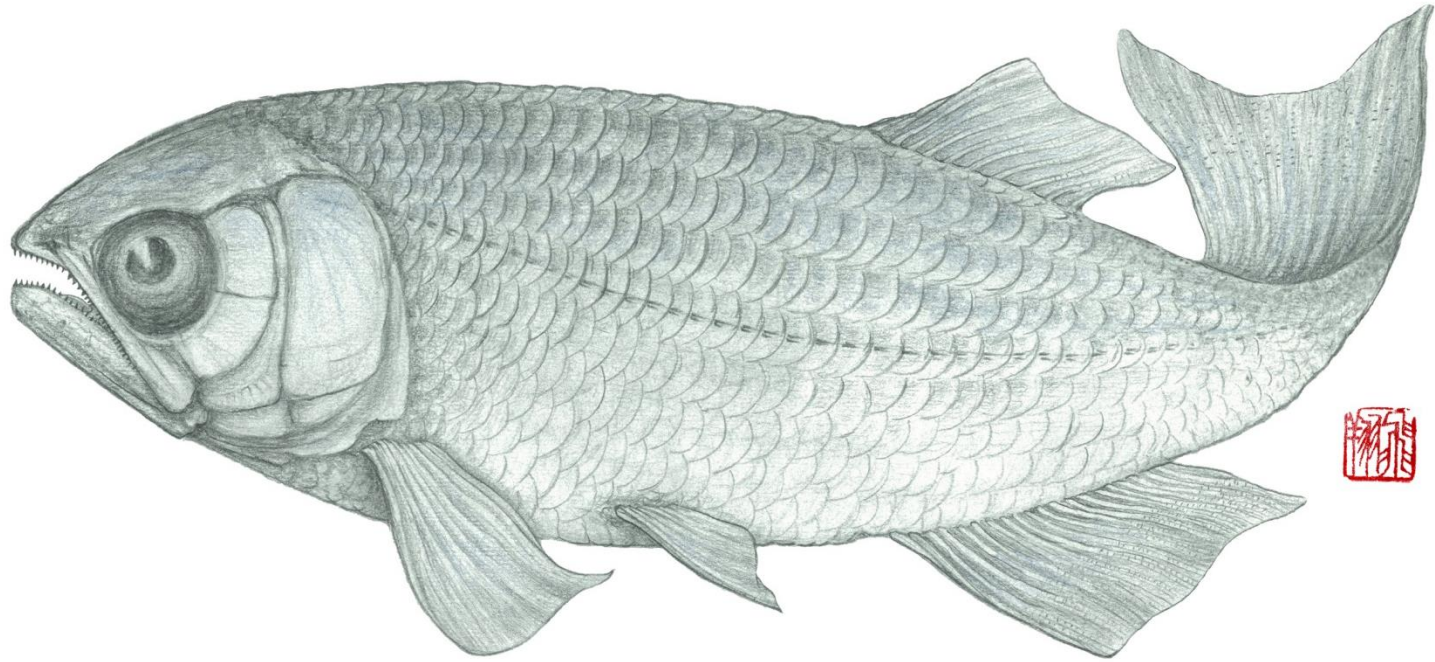
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# *Paralycoptera* sp. 副狼鱗魚



# *Paralycoptera* sp. 副狼鰭魚



Credit: Dr. Wu Feixiang, IVPP  
復原圖由古脊椎動物與古人類研究所吳飛翔博士提供

# Implications 影響

- Extension of *geographical* and *temporal* range

地理範圍與年代擴展

- Southward by ~700 km: from Fujian to HK

向南~700km: 福建至香港

- Back by ~40 Myrs (Early Cretaceous back to Late Jurassic)

向前~4千萬年 (早白堊紀至晚侏羅紀)

→ Use this new knowledge to evaluate our understanding of Chinese fish from those times, particularly of osteoglossomorph fish.

幫助了解恐龍時代的魚類 (尤其骨舌魚)





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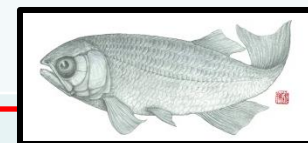
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Ma, million years ago 百萬年前	Period 紀	Examples of HK localities 香港地點例子	Fossil types 代表化石
~2.6 - 0	Quaternary 第四紀	-	-
~23 - 2.6	Neogene 晚第三紀	-	-
~65.5 - 23	Palaeogene 早第三紀	Tung Ping Chau 東平洲	Plants 植物, insects 昆蟲
~145.5 - 65.5	Cretaceous 白堊紀	Port Island 赤洲	- 
~201.6 - 145.5	Jurassic 侏羅紀	Lai Chi Chong 荔枝莊	Plants 植物, <i>Paralycoptera</i> 副狼鱗魚
~251 - 201.6	Triassic 三疊紀	-	-
~299 - 251	Permian 二疊紀	Ma Shi Chau 馬屎洲	Plants 植物, Shells 貝殼
~359 - 299	Carboniferous 石炭紀	Yuen Long 元朗	Spores 孢子
~416 - 359	Devonian 泥盆紀	Pak Sha Tau Chau 白沙頭洲	Placoderm fish 盾皮魚

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# Implications 影響

- Late Jurassic age reinforces an East Asian origin for osteoglossomorph fish.

晚侏羅紀年代支持東亞為骨舌魚的起源地

- **HK's first Mesozoic (dinosaur-era) vertebrate fossil**

香港首次發現恐龍時代的有脊椎動物化石

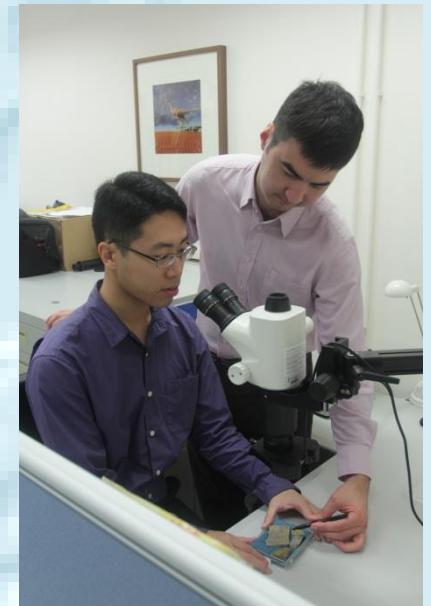
– **Potential for more exciting discoveries: dinosaurs?!**

未來會否發現恐龍化石？

# Fun and educational experience

## 趣事與學習經驗

- Learnt to describe and identify a fossil  
學習化石描述和鑑定
- Learnt to take pictures with a microscope  
學習使用顯微鏡拍攝
- Chance to study fossil materials from other museums for comparative work  
研究更多化石



# Fun and educational experience

## 趣事與學習經驗

- Chance to work with CAS Academician,  
Prof. Chang Mee-mann  
與中國科學院專家學者 - 張彌曼教授合作



- Chance to publish the results  
發表研究成果
  - Learnt how to write a paper and to produce high-quality images  
提升論文和圖像質素
  - Appreciated the hard work of scientists  
明白和欣賞科學家的研究工作

格 明  
物 德

# Q & A

Mr. Tze-kei Tse (Edison) 謝子旗: [u3500711@connect.hku.hk](mailto:u3500711@connect.hku.hk)  
Dr. Michael Pittman 文嘉棋: [mpittman@hku.hk](mailto:mpittman@hku.hk)