

陝北安定層中的 *Baleiichthys* 新種 魚化石*

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本文記述的魚化石，是1951年石油管理總局第六地質隊在陝北所採集的脊椎動物化石的一部分。除魚化石外，在郿縣葫蘆河黑水寺的同一層中還採有魚糞化石，已由筆者撰文記述¹⁾。本文所記述的魚化石採自陝北子長縣、安定、李家岔兔兒溝。安定層在這一帶主要為紫色薄層石灰岩，含魚化石的岩性為鈣質板岩，色灰黃，稍帶有紫斑。這一標本經筆者鑑定，認為屬於叉鱗魚科(Pholidophoridae) *Baleiichthys* 屬的一個新種，命名為 *Baleiichthys antingensis* sp. nov.

Baleiichthys 一屬名原為 Rohon 氏於1892年所創立。一般看來，它在形態上很像 *Pholidophorus*，體形如鯡(herring)，體側鱗片高而窄，且在後緣有細紋或鋸齒。背鰭、臀鰭均小，尾鰭外表為正型等。但這一屬由背鰭位置靠後，可與 *Pholidophorus* 區別。

標本描述

目 Pholidophoridae

科 Pholidophoridae

屬 *Baleiichthys*

Baleiichthys antingensis Liu sp. nov. (新種)

正型標本 祇有一塊標本，頭部吻端稍殘缺。古脊椎室登記號 V 808，野外號碼“動物18”。

產地及層位 陝西省子長縣(安定縣)安定李家岔兔兒溝安定層，在該地此層上

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1) 劉憲亭，陝西郿縣及郿縣中生代魚糞化石，古生物學報1卷3期157頁。

部为白堊紀的橘紅色交錯層砂岩所覆；底部与黑色頁岩相接。層位为上侏羅紀。

特徵 体形如鲱，中等大小，体侧有三行高而窄的大鳞，背鳍小，其起点与腹、臀鳍的起点中间处相对，尾鳍分叉小，头长与体高约相等。

标本的描述 这一鱼化石标本在岩石中呈侧平臥狀，顏色較岩石色鮮明，鱗片有黃色瑣瑯光澤。除头部前端殘缺外，其他各部大体尚完好，尾柄部鱗片缺失，祇有印痕保留。虽然头的前端殘缺，由整体观察，估計全長可達 240 毫米，体高 63 毫米，头長約为全長四分之一，約与体高相等。体形輪廓，背平直，如弓的弦，腹拱出如弓背狀；頗接近現代鲱魚形狀。背鳍、臀鳍均小，背鳍尤甚；背鳍基短，鳍条少，其起点接近尾柄，与腹鳍及臀鳍起点中间处相对。臀鳍基較背鳍基長，其起点在背鳍基後。尾鳍外表正型，分叉不大，上下尾鳍葉的外緣交角为 31° 。在背鳍、臀鳍的前緣及尾鳍的外緣均有排列甚密的細長棘鳞（fulcra）。偶鳍殘缺，僅腹鳍保存鳍条數根。

鱗片厚，其每一鱗片後緣具有斜的細紋，在体側大鱗上尤其清晰（插图 1, b）。侧

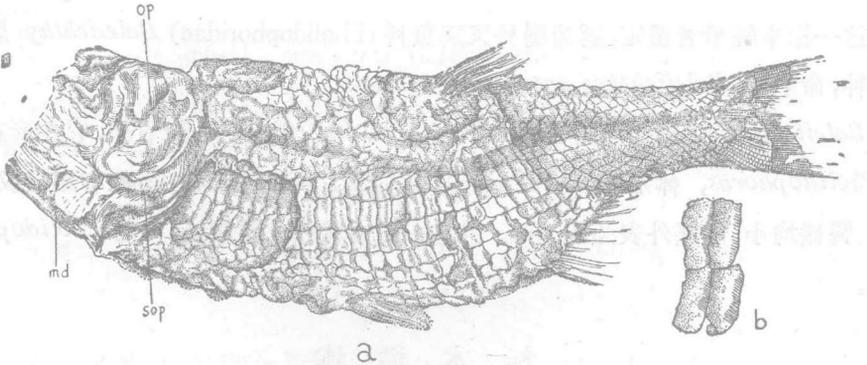


圖 1 *Baleiichthys antingensis* Liu sp. nov. $\times 1/2$

a. 左側視； b. 側鱗的內面視。 ($\times 1/2$)。 md. 下頷骨； op. 鰓蓋； sop. 下鰓蓋。

鱗（flank-scales）高而窄，共有三行，中間一行最大，高为長的兩倍，上下二行次之，高与長相差較少。此种側鱗自头後開始，向尾部逐漸由長方形变成菱形，至臀鳍上方处，則完全成为菱形。腹部有稜鱗（ridge-scale）。腹鳍与尾鳍前無大鱗片。

头部除吻端缺失外，其他各組成骨片多已压坏，彼此界限不清，难以分別描述；但部分骨片的位置与形狀仍可看出，如鰓蓋（op）較大，略呈半圓形。下鰓蓋（sop）呈鑷刀狀，下頷骨（md）厚大，前端缺失，牙齒未保存。由齒骨位置判断，魚的口相当大，開於前端。由部分鰓蓋观察，头部骨骼表面光滑無綫紋。

比較与討論 这一屬的魚最初發現於西伯利亞依尔庫次克的北方 Ust-Balei 村

附近侏罗紀地層中。Rohon 氏根据 *Baleiichthys graciosa* 確定这一屬的特徵, 这种魚的身体小(64—67 毫米), 头長大於体高, 背鳍也較長。另一种 *Baleiichthys lata*, 与前种相似, 只是头部更为長大一些, 以上两种皆为小魚, 比我們的标本小的多, 且有以上所述其他幾點不同, 故我們这一标本应为一新种, 以該魚化石發現於陝西的安定層中, 名之为 *Baleiichthys antingensis*。

由安定層中所含魚化石的保存情况, 沒有磨蝕現象, 又鄜縣的同一地層中肺魚的糞化石的存在, 还有介類化石, 保存均很完好, 証明这一沉積为一靜水环境的沉積。由所含魚化石及介類化石的種類(包括三种), 說明当时这一水域裏動植物的滋長相当繁盛。地質工作者如能多加以注意, 可能採到更多而完整的标本, 这全將有助於沉積环境与古動物生态方面的研究。

附記 田在藝同志在子長縣土耳其河所採魚化石 (FV_{64}), 也屬於此种。

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A NEW *BALEIICHTHYS* FROM SHENSI

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(Abstract)

The Specimen, on which this paper is based, was collected in 1951 from "Anting" formation in North Shensi. It was preserved in a bed of calcareous slate, yellowish gray in color. The diagnostic features of the specimen are quite characteristic of the genus *Baleiichthys* Rohon.

The generic name *Baleiichthys* was founded by J. V. Rohon in 1892. In general morphological aspects, this genus resembles *Pholidophorus*, but differs from the former in that the dorsal fin is more remote in the present genus.

Description of species

Order	Pholidophoroidea
Family	Pholidophoridae
Genus	<i>Baleiichthys</i>
	<i>Baleiichthys antingensis</i> Liu sp. nov.

Holotype: A nearly complete specimen, rostral part broken away. Field No. "An. 18". Cat. No. V. 808, the Laboratory of Vertebrate Palaeontology.

Horizon and Locality: Li-chia-cha, Anting, Tzech'ang District, northern Shensi. "Anting" formation, Upper Jurassic.

Diagnosis: Like herrings in shape and size. Three rows of high and narrow scales on flanks, middle row particularly large. Dorsal small, beginning from the point at the middle of the origins of anal and ventral. Caudal fin small, slightly forked. Head length equals to body height.

Description: It is a moderate-sized herring-like fish. The fossil is bright yellowish in color, especially on scales. Unfortunately the head is crushed and the rostral part broken. The operculum is intact. The length of the head about one-fourth of the total length of the fish, and is nearly equal to the depth of the body. The total length of the fish is about 240 mm and its depth 63 mm. Both dorsal and anal fins are small, especially the former. The dorsal fin rises near the base of the caudal and opposite to the midpoint between the origins of the anal

and the ventral. The anal fin is larger than the dorsal, rising behind the base of the dorsal. The caudal fin is homocercal, its upper and lower lobes forming an angle of 31 degrees. Slenderly and compactly arranged fulcrum present on front margin of the dorsal and anal fins, and on both lobes of the caudal. The paired fins are imperfectly preserved, only a few rays of the ventral remained and the pectorals are missing.

The scales are thick and coated with shiny ganoine. There are shallow and parallel grooves on their hind part (fig. 1, b). On flanks there are three rows of high and narrow scales which gradually diminish in height and become rhombic in shape as they approach the tail. The middle row of the flank-scales are the largest, their height is about twice of their breadth, while in the two other rows their height is only about one and a half of their breadth.

Remarks: This genus was first discovered from Jurassic, Ust-Balei, north of Irkutsk, Siberia. Rohon erected the generic name, based upon two small fishes, namely, *Baleiichthys graciosa* and *Baleiichthys lata*. Except the smallness in size, they differ from our specimen, in having a head, longer than its body depth, and in having the dorsal with a longer base. As the specimen was collected from "Anting" formation the author propose to name it as *Baleiichthys antingensis*, for indicating its stratigraphical affinity.

Considering the presence of the present specimen so well preserved and the occurrence of well-preserved coprolites, many unrolled shells of *Unio* and other fresh water molluscs in the same Formation in Fuhsien, It seems that the Upper Jurassic sediments of North Shensi were deposited in calm water of fairly large in extent and with abundant organisms.

