

# 新疆准噶尔盆地 Pholidophoridae 科的一新属

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本文所記述的标本是 1959 年全国地层會議期間北京地质学院楊遵仪教授交与笔者进行鑑定的,后据安延愷同志函告,該标本系采自准噶尔盆地东北部的紅旗山灰黄色泥岩层中。經观察应属于 Pholidophoridae 科,代表一新属。其特征及产出层位均值得加以記述,以供有关方面参考。謹向楊遵仪教授及安延愷同志致以謝意。

## 标 本 記 述

### 目 Pholidophoridae

### 科 Pholidophoridae

### 紅旗魚属 *Hungkiichthys* Liu et Wang (新属)

### 安氏紅旗魚 *Hungkiichthys anni* (新属,新种)

(图版 I, 图 1—3)

**标本** 一較完整个体,尾鳍末端稍有殘缺。古脊椎动物与古人类研究所登記号 V. 2336。

**产地及层位** 新疆准噶尔盆地紅旗山,中侏罗統。

**特征** 体长梭形,头大,約相当全长的  $1/3$ , 眼大。背鳍和臀鳍均小,大小相若,有細棘鳞。背鳍起点居臀鳍起点之前,稍后于腹鳍。体側有四列較高的側鳞。尾鳍上叶有由 3—4 个鳞片組成的鳞列。

**标本描述** 为一保存在灰黄色泥岩中的小魚,魚体呈褐黄色,与围岩很易区分。体較細长。头相当大。全长約 65 毫米,虽尾鳍末端缺失,估計其全长不超过 70 毫米。头長約为全长的  $1/3$ 。身体最高部位位于胸鳍处,与头高相等。背部平直,腹部稍拱曲,尾柄細,背腹側均有稜鳞。尾鳍上叶长,前方的一个稜鳞較大。

头長大,虽由于挤压关系,有些骨片难以辨別,但主要部分大致可以观察。外部骨骼表面平滑。吻短而鈍,上颌骨錯动,观察不清,上颌骨两块也有錯动。前上颌骨小。下颌稍突伸,齿骨由前向后逐漸加高,口裂中等,不达眼后緣,口緣是否有牙齿,在該标本上观察不清。眼大,居头前部,具环眼骨,副蝶骨长,平行于眼窝中下部,在其前上方可見到圓形側篩骨。在頂骨側緣可看到眶上感觉沟。鳃盖系統完全,鳃盖骨最大,略呈三角形,下鳃盖骨居于前者的后下方,較小。其前下方有間鳃盖骨。前鳃盖骨新月形,輪廓不甚清楚。匙骨中等大小,上下两部約相等。

胸鳍長大,約具 14 根鳍条,基部排列紧密,分节不清,向后約伸达腹鳍起点。腹鳍小,起点居背鳍起点稍前方,距臀鳍較距胸鳍为近。背鳍起点約居体中部,背鳍基短,鳍条排列較疏,共 9 根,尚可看到部分相应的支持骨。臀鳍起点位于背鳍基之后,大小与背鳍相

若,具 11 根鳍条。两者的鳍条均较长,远端约  $1/2$  部分分节,节距较长。尾鳍半歪形,上下鳍叶外观相等,鳞叶已缩至尾柄,但尚有由 3—4 个鳞片组成的一列鳞叶伸向尾鳍上叶;尾鳍条长,分叉角度不大,叉裂也较浅,鳍条远端约  $2/3$  分节,节距长。尾鳍及背、臀鳍的前缘有纤毛状的棘鳞,数目甚少。

鳞片薄,以尾部的较厚,体前部两侧鳞片高大于长,背腹面及尾部的鳞片呈菱形。在前部的鳞片可清楚地看到上下鳞片嵌接的楔突与楔槽,楔突粗大。侧鳞表面光滑,后缘有细小锯齿,有两列侧鳞较大,高约为长的两倍,该两列的上下各有一列稍小于主列的侧鳞,但大于背、腹部的鳞片。侧线自头后平伸,贯穿上列侧鳞(较小的侧鳞),直达尾柄末端。侧鳞以头后者最大,向后逐渐变小,约于背鳍起点下方,变成菱形。侧线鳞片约 38 枚,侧线与背鳍起点之间有 5 枚,侧线与臀鳍起点之间约有 7 枚鳞片。

#### 标本测量 (Measurement of specimen)

	毫米
全长 (Total length of body)	65.5
体长 (Length of body without caudal)	56.5
体高 (Depth of body)	13.5
头长 (Length of head)	22
头高 (Depth of head)	13
眼径 (Diameter of eye)	5
背鳍基长 (Length of dorsal base)	5
臀鳍基长 (Length of anal base)	4
尾柄高 (Depth of caudal base)	5

**比較和討論** 从我們这一标本的几个主要特征看,无疑地应属于 Pholidophoridae 科。該科包括种类較多的属,如 *Pholidophorus* 属,分布也較广。后来,伍德华氏 (A. S. Woodward, 1941) 曾将其中的一些种划分出来,另外建立三个新属,即: *Pholidophoroides* (*Pholidophorus crenulatus* Egerton), *Pholidophoristion* (*Pholidophorus ornatus* Ag.), *Ichthyoxentema* (*Pholidophorus purbeckensis* Davis)。使这一属的种数有所减少。按文献所列举的,該科尚有 *Prohalecites*, *?Megalopecterus*, *Baleiichthys*, *Ceramurus* 和 *Pleuropholis* (Romer, 1955) 等属。新疆紅旗山魚化石在侧鳞相接方式上,背鳍与臀鳍的位置关系均与 *Pholidophorus* 相近;在棘鳞的形状上与 *Ceramurus* 相近。但其体較細长,胸鳍較长大,背臀二鳍大小相若,尾鳍鳞叶尚保存一短列小鳞片等方面,显然与上述两属有別,尤以鳍条分节及尾鳍鳞叶的特征較为明显。

1941 年伍氏所建立的三个属,基本上与 *Pholidophorus* 相近,无须一一比較,与其他几属的區別更較显著。笔者认为 *Prohalecites*, *Ceramurus* 属是否应归属于叉鳞鱼科,尚有疑問。这一类魚的地史記錄自中三迭世开始至侏罗紀最为繁盛,种属也較多。如以我們这一标本的鳍条分节现象尾鳍鳞叶萎縮、只有一短列小鳞片來說,它为一較进步类型的代表,故含魚化石地层的时代,約相当于侏罗紀中期或稍早。新疆紅旗山这一标本代表一个新属,今以其产地紅旗山,命名为安氏紅旗魚 *Hungkiichthys anni*, gen. et sp. nov., 种名是贈予在該地区从事地質工作,而又热心于古生物采集工作的安延愷同志。

## 主要属的检索表

- I. 侧鳞为楔槽式联接, 不十分高
- 一、背鳍起点居于臀鳍之前, 胸鳍和腹鳍均小 ..... 叉鳞鱼 (*Pholidophorus*)
- 二、背鳍起点居于臀鳍稍前, 胸鳍长大, 腹鳍中等大小 ..... 红旗鱼 (*Hungchiichthys*)
- 胸鳍和腹鳍均小 ..... 贝莱鱼 (*Baleiichthys*)
- II. 侧鳞为楔槽式联接, 一列特别高 ..... 侧鳞鱼 (*Pleuropholis*)

## 参 考 文 献

- [1] Agassiz, Louis, 1833—1844, *Récherches sur les poissons fossiles*, II.
- [2] Arambourg, C., 1935, Contribution à l'étude des Poissons du Lias supérieur. *Ann. Pal.*, 24, 3—32.
- [3] Deecke, W., 1889, Ueber Fische aus verschiedenen Horizonten der Trias. *Palaeontogr.*, 35, 2—3, 97—138.
- [4] Liu, H. T., 1955, A new *Baleiichthys* from Shensi. *Acta Palaeont. Sinica*, III, 4, 317—321.
- [5] Rohon, J. V., 1892, Die Jura-Fische von Ust-Balei in Ost-Sibirien. *Mém. Acad. Sci. St. Pétersb.*, VII, 38.
- [6] Woodward, A. S., 1895, Catalogue of Fossil Fishes in the British Museum (Nat. Hist.), III, 446—490.
- [7] ———, 1895, The fossil fishes of the Talbragar beds (Jurassic?). *Mem. Geol. Surv. New South Wales*, *Palaeont.* 9, 15—19.
- [8] ———, 1895, A description of *Ceramurus macrocephalus*, a small fossil fish from the Purbeck beds of Wiltshire. *Geol. Mag.* IV, 2, 401—402.
- [9] ———, 1941, The Mesozoic ganoid fishes of the Genus *Pholidophorus* Ag., *Ann. Mag. Nat. Hist.*, (11), 8, 88—91.

## A NEW PHOLIDOPHORID FISH FROM SINKIANG, CHINA

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## (Summary)

A fairly complete specimen of pholidophorid fish collected from Hungkishan, Dzungaria-Basin, Sinkiang was sent to us by Prof. T. Y. Yang, Peking Geological Institute. It was preserved in a bed of grayish-yellow marly shale. The diagnostic features of the specimen represent a new form of the family Pholidophoridae.

Thanks are due to Prof. Yang who brought us the specimen, and to Mr. An Yen-k'ai who kindly supplied geological information and to Mr. Wang Che-fu who photographed the specimen for this paper.

## DESCRIPTION OF SPECIMEN

## Order Pholidophoridae

## Family Pholidophoridae

Genus *Hungkiichthys* gen. nov.

Diagnosis: Trunk fusiform, slender and head relatively large. External bones smooth. Fin-fulcra few, long and slender. Pectoral fins long; dorsal and anal fins small, the former in advance

of the latter and arising somewhat behind the pelvic fins. Caudal fin shallowly forked. Squamation complete; scales thin and deeply overlapping, usually with an inner rib and peg-and-socket articulation; principal flank-scales deeper than broad. A short series of scales (3—4) on the end of the upper atrophical scaly lobe. Ganoid ridge-scales on both borders of the hinder half of the caudal region.

***Hungkiichthys anni*, gen. et sp. nov.**

(Pl. I, figs. 1—3)

**Type specimen:** A fairly complete specimen; Cat. No. V.2336, the Institute of Vertebrate Paleontology and Paleoanthropology.

**Horizon and Locality:** Middle Jurassic; Hungkishan, Dzungaria-Basin, Sinkiang.

**Diagnosis:** As for the genus.

**Description:** This is a slender specimen about 70 mm. in length. The head is large, measures about one-third of the total length of the fish, and is nearly equal to the depth of the body. The head bones are broken and displaced, but the shape or outline of the maxillary and opercular bones are distinct. They are arranged as ordinarily in *Pholidophorus*. The large orbit as usual is crossed by a very stout parasphenoid bone. Oral cleft is moderate, teeth cannot be seen in the specimen, probably absent on maxilla and dentaries. Branchiostegal rays are unknown.

The pectoral fin is excessively large, comprises about 14 long rays extending nearly to the insertion of the pelvic fins. The pelvic fins, which are inserted slightly before the origin of the dorsal, are much shorter than the pectorals. Both dorsal and anal fins are similar in shape and small, especially the latter. The dorsal fin rises in front of the origin of anal, and comprises 9 slender rays. The anal fin, which arises behind the dorsal, is about rays. Both their foremost slender rays are fringed by a few very long and slender fulcra. The caudal fin is shallowly forked and similarly fulcrated. In all the fin-rays the segments between the articulations are longer than broad.

All of the scales are thin, with posterior serrations on the flank-scales. There are four rows of large flank-scales, which are deeper than broad, and strengthened on their inner face by a stout vertical ridge. Those of the abdominal region are united by a large peg-and-socket articulation. Principal flank-scales (two middle rows) are rather deeper than the other two rows. Further back and on the caudal region they gradually become rhombic and serrations disappeared.

The lateral line just crosses the upper row of flank-scale, and reaches the caudal pedicle. The scales are regularly arranged in about 38 transverse series; and the series above the origin of the pelvic fin comprises 13 scales, of which the eighth is crossed by the lateral line. There is a peculiar row of small scales (4) on the atrophical scaly lobe of the hemi-heterocercal caudal fin. It indicates that this species is comparatively advanced in this family.

**Remarks:** This specimen is distinguishable from the known forms by: 1) The position of the dorsal fin, which is in front of the origin of the anal and just behind that of the pelvic fins. 2) All fins are fringed by a few very long and slender fulcra. 3) There are four rows of flank-scales, among them the two middle rows are the largest. 4) The shape of the scaly lobe of the caudal fin is peculiar.

The generic name indicates the fossil locality of this specimen, and the specific name is proposed in honour of Mr. An Yen-k'ai, who worked ardently in collecting the paleontological materials of Sinkiang district.

## SYNOPSIS OF GENERA

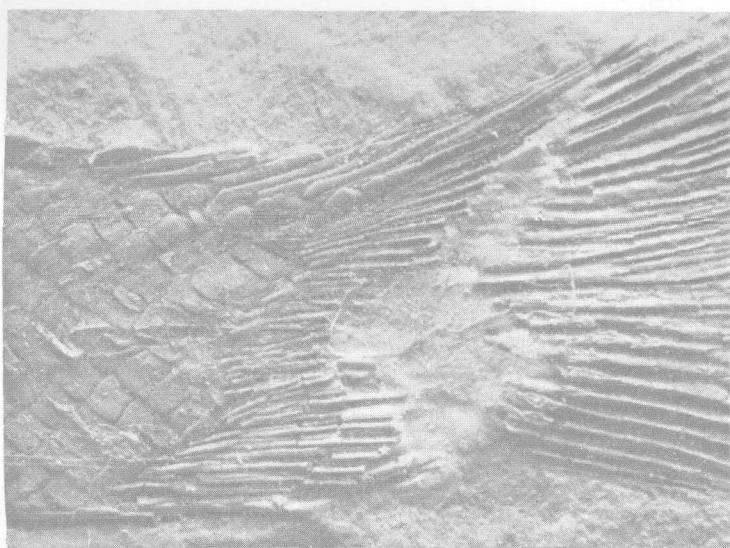
- I. Flank-scales united by peg-and-socket, not excessively deepened.  
 Dorsal in advance of anal  
     Pectoral and pelvic fins small ..... *Pholidophorus*  
 Dorsal not excessively in advance of anal  
     Pectoral fins large, pelvic fins moderate ..... *Hungchiichthys*  
     Pectoral and pelvic fins small ..... *Baleichthys*
- II. Flank-scales united by peg-and-socket, one series excessively deepened ..... *Pleuropholis*

## 图版說明(Explanation of Plate)

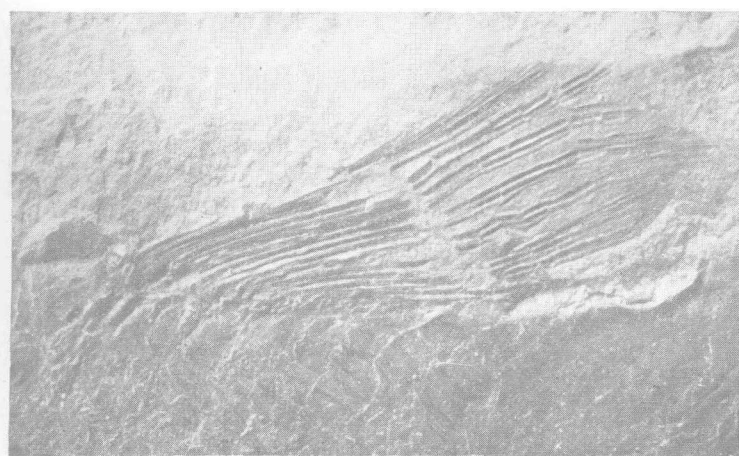
1. 安氏紅旗魚 (*Hungchiichthys anni*, gen. et sp. nov.)  
     近于完整的个体, 左側視, ×2, 登記号 V. 2336.  
     Nearly complete fish, left side view, ×2, Cat. No. V. 2336.
2. 同上: 背鰭上的棘鱗及鰭條分节情况, ×8.  
     Ditto; fulcra of dorsal fin and articulation of fin rays, ×8.
3. 同上: 尾鰭上叶的鱗列, ×11.  
     Ditto; portion of caudal fin, showing rhombic scales, ×11.



1



2



3