

# 新疆晚三叠世哈萨克虫化石新材料

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## 内 容 提 要

记述的哈萨克虫首次发现于吐鲁番盆地大河沿西北 15km 处的艾丁湖煤矿, 其中包括一新种, 与其共生的有延长植物群, 时代为晚三叠世, 层位与黄山街组相当。由于在所含哈萨克虫的该组中多处发现油气显示及沥青脉, 可做为今后找油气及地层划分与对比的标志层。

**关键词** 哈萨克虫 吐鲁番盆地 艾丁湖煤矿 晚三叠世黄山街组

本文记述的哈萨克虫(*Kazacharthra*)标本是 1988—1989 年笔者在吐鲁番盆地进行石油地质调查时于大河沿西北约 15km 处的艾丁湖煤矿首次发现的, 与其共生的有延长植物群, 时代为晚三叠世, 层位与黄山街组相当。丰富的阿拉木图虫(*Almatium*)等化石沿层面分布, 个体相互叠置产出, 背甲保存完好, 所有背壳表面脉纹装饰清晰, 颞沟脊、背器官等构造明显, 部分标本保存了胸部附肢、腹节及尾节。该动物群在本区的发现, 为进一步阐明甲壳动物的演化、吐鲁番-哈密盆地及其周缘该套生油岩系的划分及对比提供了新的化石材料。

作者曾得到陈丕基、陈润业和洪友崇 3 位教授的指导和帮助, 陈丕基教授审阅了文稿, 并赠送了他的最新研究成果, 借此谨致谢意。

哈萨克虫产自黄山街组中部灰绿色泥岩中, 与其共生的有叶肢介、介形虫和植物化石, 自上而下可分为 3 层:

上三叠统 黄山街组 98.6m

3. 灰绿色泥岩, 顶部为 50cm 厚的黄色页岩, 含菱铁矿结核及条带。

*“Neocalamites carcinoides, Equisetites sarrani, Danaeopsis fecunda, Bernoullia zeilleri (植物);*

*Palaeolimnadia sp. (叶肢介); Darwinula elongata (介形虫); Almatium gusevi, A. elongatum,*

*A. subquadrata sp. nov., Zhungarium cardiforme (哈萨克虫)* 37.6m

2. 黄灰、灰绿色块状砾岩与砂岩互层。 *Neocalamites sp.* 及植物茎干 56m

1. 褐灰色砾岩夹灰绿色含砾粗砂岩 5m

该组与上覆地层下侏罗统八道湾组底部楔形砾岩呈平行不整合接触, 与下伏上二叠统下仓房沟群呈断层关系。

## 化石描述

甲壳纲 Crustacea

鳃足亚纲 Branchiopoda Latreille, 1917

哈萨克虫目 Kazacharthra Novojilov, 1957

凯特蒙虫科 Ketmenidae Novojilov, 1957

阿拉木图虫属 *Almatium* Novojilov, 1957

**亚方形阿拉木图虫(新种) *Almatium subquadrata* sp. nov.**

(图版 I, 图 1, 2)

**描述** 标本数量多。背甲保存完整,背壳表面脉纹装饰清晰,背器官及颞沟脊显著。背甲近方圆形,高 15mm,宽 17mm,宽略大于高,宽高比 1.2—1.4;背壳前边缘较平缓,向两侧急剧过渡,后凹部具小刺,后凹角小,约 60°;背边缘窄;背器官小而圆,周缘下凹,呈圆形突起,直径 0.4mm,距背壳前边缘 3mm;颞沟区显著,颞沟脊大而清晰,向两侧微上斜,末端略膨大,中央部位呈球形;在背器官与颞沟脊之间还有一小的圆形的凸起,系小颞所在位置在背壳上的反映。这种肥大的背甲虫体可能为雌性。

**比较** 新种背甲近方圆形,背壳前边缘较平缓,后凹角小等特征,可与本属其它种相区别。

**伸长阿拉木图虫 *Almatium elongatum* Wei, 1984**

(图版 I, 图 3—5)

1984 *Almatium elongatum* Wei, 西北地区古生物图册,新疆维吾尔自治区分册(三),100 页,图版 51,图 7—9。

**描述** 标本 14 块。背甲保存完好,背壳表面构造明显,有些标本保存了胸节和腹节。背甲横宽,似长卵形,高 13mm,宽约 25mm,宽高比 1.9,比值较稳定;背壳前边缘平缓弧形,向两侧均匀过渡;背边缘窄;后凹开阔,后凹角 100°左右;背器官显著,呈卵圆形,长径 0.8mm,位于颞沟区上缘外侧,距前边缘 2.8mm;另有一圆形突起,位于颞沟脊与背器官之间;颞沟区显著,颞沟脊向两侧微上斜,末端略膨大,中央部位呈球形,直径约 2.7mm。所有背壳表面均有脉纹装饰。背甲呈长卵形者虫体可能为雄性。

腹部均可见到腹节,最多可达 29 节(图版 I, 图 4),长方形,每节背面有两上小瘤,沿纵向排列成两列,将腹躯干分成三部分;胸部可见到附肢(图版 I, 图 4)。

综上所述,哈萨克虫化石在艾丁湖地区上三叠统黄山街组的发现,为新疆又增加了一个新产地。该组是新疆石油地质界所公认的生油层,浅湖至较深湖相暗色泥岩发育,沉积厚度几十至数百米,其中富含多门类生物化石,有机质丰富。塔里木盆地北缘、吐鲁番-哈密盆地和准噶尔盆地及其周缘等地区,在所含哈萨克虫化石的黄山街组中多处发现油气显示及沥青脉(雍天寿等,1994)可视为找油及地层划分与对比的标志层,具有重要的实际意义。

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## NEW MATERIALS OF LATE TRIASSIC KAZACHARTHRA FROM XINJIANG

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**Key words:** Kazacharthra, Turpan Basin, Aiding Lake Coal Mine, Late Triassic Huangshanjie Formation

### Summary

First discovered in the Aiding Lake Coal Mine, about 15 km northwest of Daheyan, during a petroleum geological survey in a period from 1988 to 1989, the Kazacharthra illustrated in this paper, symbiotic with the Yanchang Flora, are of Late Triassic, and its corresponding strata equal to the Huangshanjie Formation. With well-preserved and completed carapace bearing striking venous ornament and distinct mandibular groove ridge and dorsal organ, some even preserved with thoracic appendages, somites and telsons, *Almatium* and other fossils, overlapping one and other, richly occur parallel to the bedding plane. The finding of this fauna provides new fossil materials not only for making subdivision and correlation of this set of oil-producing formation in Turpan-Hami Basin and its marginal areas, but also for expounding the evolution of Crustacea.

Thanks go to Professors Chen Pei-ji, Chen Run-ye and Hong You-chong for their kind help and directions in various ways. Prof. Chen Pei-ji generously presented his new achievements, and read over the manuscript.

The Kazacharthra, in associated with Estheria, Ostracoda and plant fossils, are from the greyish green mudstone in the middle part of the Huangshanjie Formation, which can be subdivided in ascending order into three layers as follows.

Upper Trassic Huangshanjie Formation

98.6m

3. Greyish green mudstone, with a 50cm thick yellow shale at the top, bearing siderite nodule and stripe, yielding the plants *Neocalamites carcinoides*, *Equisetites sarrani*, *danaeopsis fecunda*, *Bernoullia zeilleri*; the estherian *Palaolimnadia* sp., the Ostracodes *Darwinula elongata* and the Kazacharthra *Almatium gusevi*, *A. elongatum*, *A. subquadrata* sp. nov., and *Zhungarium cardi-forme*.

37.6mm

2. Yellowish grey to greyish green massive conglomerate and sandstones in alternating beds, with

the plant *Neocalamites* sp. and plant stems.

56m

1. Brownish grey conglomerate interbedded with greyish green boulder-bearing coarse-grained sandstone.

5m

The formation is parallel unconformably overlain by the wedge-formed conglomerate of the lower Jurassic Badaowan Formation and in contact with the underlying Upper Permian Xiachangfangou Group with a fault.

## SYSTEMATIC DESCRIPTION

### Class Crustacea

### Subclass Branchiopoda Latreilla, 1917

### Order Kazacharthra Novojilov, 1957

### Family Ketmenidea Novojilov, 1957

### Genus *Almatium* Novojilov, 1957

### *Almatium subquadrata* sp. nov.

(Pl. 1, figs. 1, 2)

**Description:** Individuals numerically abundant; carapace well-preserved, with strikingly venous ornament, and distinct dorsal organ and mandibular groove ridge. Carapace subquadrate in outline, 14mm in length and 17mm in breadth; ratio between breadth and length about 1.2 — 1.4; front margin smooth, but with rapid lateral transition; posterior concave angle small, about 60°, while posterior concave ornamented with many denticles; dorsal edge narrow, with concave rim, about 3mm to the front margin; dorsal organ small and convex-rounded, about 0.4mm in diameter; mandibular groove region conspicuous, with an egg-shaped central part; mandibular groove ridge strong and distinct, slightly uptilt laterally and somewhat inflated at the end; between the dorsal organ and the mandibular ridge, existing a circular prominence which may be reflection of the maxilla on the carapace. Obese carapace probably female in sex.

**Remarks:** The species differs from others of this genus in the subcircular carapace, the flat straight front margin and the small posterior concave angle.

### *Almatium elongatum* Wei, 1984

(Pl. 1, figs. 3—5)

1984 *Almatium elongatum* Wei, Paleontologic Atlas of Northwest China, Xinjiang Uygur Autonomous Region, (3), p. 100, figs. 7—9.

**Description:** 14 specimens, with carapace well-preserved, bearing striking dorsal structures; even somites of the abdomen and thorax preserved in some specimens. Carapace transversely wide, para-elliptical in outline, 13mm in length, and 25mm in breadth; ratio between breadth and length rather stable, about 1.9; front margin gently curved and smoothly transitional laterally; dorsal edge narrow; posterior concave broad; posterior concave angle about 100°; a distinct dorsal organ elliptical in outline, about 0.8mm in long

axis, well observable on periphery of the upper mandibular groove margin, 2.8 mm to the front margin; mandible convex-circular, lying between the dorsal organ and the mandibular groove ridge; mandibular groove region noticeable; mandibular groove ridge with a globular central part, about 2.7 mm in diameter, gently uptilted laterally and slightly inflated at the ending. Venous ornaments all well discernible in our specimens.

Somites of abdomen rectangular in outline, all distinctly observable in our specimens (with maximum one about 29) each bearing two tubercles on the dorsum, forming two lines lengthwise, dividing the abdomen into three parts; sometimes thoracic appendages probably preserved (Pl. I, fig. 4).

As discussed above, the discovery of *Kazacharthra* in the Late Triassic Huangshanjie Formation in Aiding Lake area provides another fresh locality in Xinjiang Uygur Autonomous Region. With a thickness from about scores to hundreds of meters, richly yielding variformed fossils, and bearing abundant organic matters, the Huangshanjie Formation is a set of shallow to sub-deep lacustrine dark mudstone, and also a well-known oil production layer. The *Kazacharthra*-bearing Huangshanjie Formation, in which asphalt veins and evidences of oil and gas have been discovered in many localities in the Turpan-Hami Basin, Junggar Basin and the northern margin of Tarim Basin and their marginal areas, may be an important criterion for oil prospecting and stratigraphical subdivision and correlation.

## 图 版 说 明

1, 2. *Almatium subquadrata* sp. nov.

1. 背壳×4, Holotype, 登记号 T40; 2. 背壳×5, 登记号 T4。

3—5. *Almatium elongatum* Wei, 1984

3. 背壳×3, 登记号 T41; 4. 标本的正面×3, 登记号 TJH3; 5. 背壳×3, 登记号 T24。

6—9. *Almatium gusevi* (Chernyshev, 1940)

背壳分别×3、×4、×4、×3, 登记号: T7、T6、T5、T26。

