

蛇尾綱化石在中国的发现

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北京地質学院貴州生产大队一个中队在 1959 年夏生产劳动中,于貴州省貴阳西、安顺北織金县吹聳下三迭統底部灰色薄层灰岩中,采得保存相当完美的蛇尾綱化石一枚。这样完好的标本在我国还算是首次发现¹⁾,有必要加以研究并发表出来,借以丰富我国的古生物学資料。

在研究过程中,承北京地質学院古生物教研室同志們热心鼓励、提供意見,本院石油系行将毕业的黃志誠同志供給地質資料,本院生产科暗室同志代拍标本照相,繪图室王素同志、楊瑞同志分別代繪化石图及本文插图,在此謹向以上同志們致謝!

标本的詳細产地是貴州織金县西南吹聳之东約 1 公里处(插图 1a),其层位是 T_1^1 、 T_1^2 之間(插图 1b)灰色及灰綠色薄层灰岩內,見柱状剖面(插图 1c)及自然剖面(插图 1d)。化石的上、下层位中均产有瓣鳃綱 *Claraia* 証明是 T_1 。

化 石 描 述

Phylum Echinodermata, Class Ophiuroidea (蛇尾綱)

Order Ophiurida Spencer 1951 (蛇尾目)

Superfamily, Ophiuricea (Müller et Troschell) 1842

体盘及腕复以明显的鱗片,或同时被复着細瘤粒或体棘,或仅为裸露的皮层。腕一般簡單,不分叉;脊骨以活动的关节連接,便于作一定程度的水平运动。生殖隙一般长,篩板特殊。

Family Ophiolepididae (鱗蛇尾科)

体小,腕棘短,略平行于腕軸,側板固着于脊骨,并部分地包围着腕,古老代表(如泥盆紀、石炭紀的)腕上背板及腹板均缺。

Genus Ophioderma Müller et Troschel 1842

属型: *Stella longicauda* Linck, = *Ophiura lacertosa* Lamarck, 1801

属的特征 体盘小,小粒裝飾密布;腕长、光滑、細弱,其兩側具有緊貼側板的短刺。每間步帶有 4 个生殖隙,成对出現(一前一后):其中 2 个位口板后,自此外伸;另 2 个位于体盘邊緣。生殖隙常按前后排列,位于同一放射軸上。口隙具坚固小突起。

1) 本刊本期孙云鑄、常安之、邵洁文中附有广东开恩区下侏罗世蛇尾綱化石,其发现尤早数月,但保存較破碎。

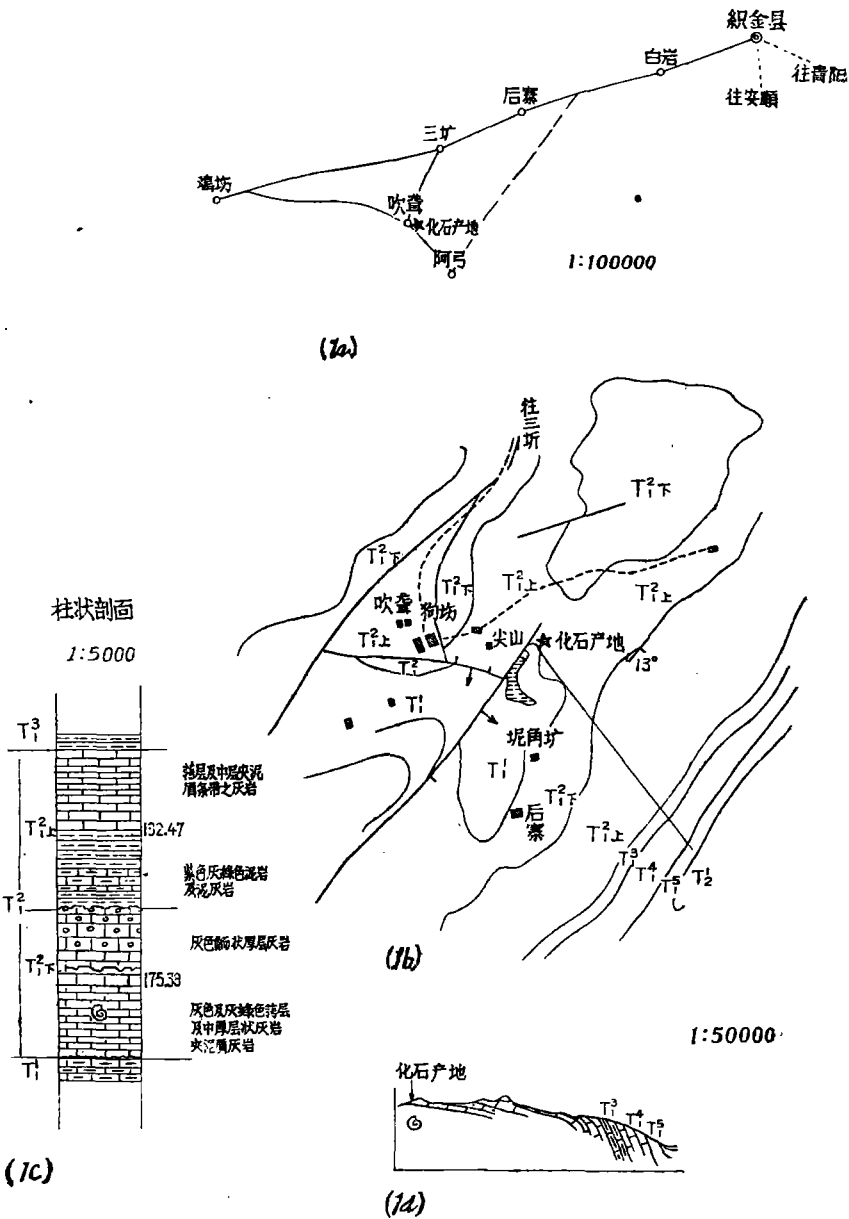


图 1a.b. 蛇尾網化石产地位置及其附近地质略图。
图 1c. 柱状剖面图示化石层位。
图 1d. 自然剖面图示化石层位。

本属以具有十分光滑的体盘和腕为重要特点, 刺、粒等飾非常微小, 以致壳表近似蛇皮, 属由此得名。

时代分布 西欧 T_3-J_1 , 广东开恩区的标本即見于 J_1 , 但在貴州出現較早(T_1^1), 那里有其他化石如瓣鳃 *Clarsia* 可定层位, 結論是 T_1^1 (图 1b, ad)。

新种 *Ophioderma schistovertebrata*, sp. nov.

(图版 1)

材料: 仅有一块相当完好的标本(全型), 示腹面构造。

特征: 体盘极小, 几乎不見; 腹面口隙呈星状, 具生殖孔 5 个。腕简单、弯曲, 但不分叉, 細长, 长至少 7 倍于体盘的直径, 腕侧板寬度大大地超过“脊椎骨”, 約为 10:1 之比。

描述: 标本口(腹)方暴露, 正中为星状口隙, 隙长约 2mm, 寬 0.3mm; 口隙旁, 即在間步带的近口端, 有小突起(可能为口板) 5 个, 其中央穿孔, 显然是生殖孔。腕頗弯曲, 其始部的骨板看不清楚, 但自口隙以外, 腕板排列清晰整齐, 尤以两行侧板的分节明显而突出, 呈小叶状, 斜交且結合于中綫“脊椎骨”上。在腕的中段每 10mm 間距共有“腕板” 5 节, 左右并列, 不交錯, 每个侧板长 2mm, 寬 1mm; 中央板极窄, 由“脊椎骨”两半組成, 看来本种缺少真正的腹板, 至少我們的标本上是沒有的。“脊椎骨”旁在侧板下方有管足孔(步带孔)一对(图 2)。

討論: 本新种与 *Ophioderma tenuibrachata* Forbes 在体形大小、腕的弯曲以及口围上的 5 个生殖孔等方面都极相似, 但后者的腕板結構极不相同——侧板小、腹板大, 管足孔也較大。后者在英国見于下侏罗世。与德国上三迭世的 *O. bonnardi* Oppel 的差別在于后者具有較大且明显的体盘。

現代蛇尾綱的腕具有腹、背、側四排骨板包围中心“脊椎骨”, 而后者原来是从象海星那样的二排步带板內弯合并而成, “脊椎骨”腹面中央是放射水管。在我們当前的标本上中綫表现为断續的小裂縫, 因此可以肯定我們的标本沒有腹板。如果把中央窄条板认为是腹板, 那末, 当前这个标本便具有两排小腹板, 这就不符合蛇尾綱的特征了。那么, 腹板哪去了呢? 答案只有两个: (1) 这个标本原来就沒有发育腹板; 果真如此, 它是比較原始的; (2) 原来应该有腹板, 但由于保存不佳而如今看不到了。我們的标本的确有局部磨損情况, 但在完好部分任何腹板的殘迹也看不到。因此, 作者傾向于前一个想法, 即本新种缺乏腹板, 較原始, 那么这一点也是成立新种的另一根据了。种名即指分裂的“脊椎骨”而言。

标本编号: 全型 PGI. E0001

野外编号: 代 $\frac{A}{T}$ -403 (G_T^A -260)。

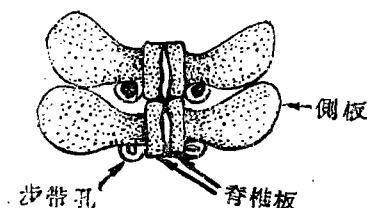


图 2 “腕板”构造图

参 考 文 献

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ON THE DISCOVERY OF A SCYTHIC OPHIUROID FROM KUEICHOU, CHINA

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A fairly complete specimen of Lower Triassic (Scythic) ophiuroid, the best of its kind ever known in China, is briefly treated here. It was collected last summer in Chihchinghsien, Kueichou Province by a field mapping team of the Peking Geological Institute. Its exact locality and horizon is shown in the text-figures (1a—c).

Thanks are due to the field mapping team which brought back the specimen, and to Mr. Huang Tze-ch'eng who kindly supplied geological information and to all the other colleagues who either photographed or sketched the specimen for this paper.

Class Ophiuroidea

Order Ophiurida Spencer 1951

Superfamily Ophiuricea (Müller et Troschell, 1842)

Family Ophiolepididae

Genus *Ophioderma* Müller et Troschll, 1842

Genotype: *Stella longicauda* Linck = *Ophiura lacerosa* Lamarck, 1801.

Diagnosis: "The disk covered with small, close-set granulations; arms long, smooth and slender; the lateral borders provided with short papillae or spines closely applied to lateral plates. Four genital slits in each interbrachial space, disposed in pairs behind each other; two are situated behind the buccal plates, from whence they diverge outwards, and two are placed near the border of the disk. The slits always lie behind each other in the same radial line. The buccal fissures are furnished with small strong papillae...." (Wright, 1866, p. 140).

Ophioderma schistovertebrata, sp. nov.

(Plate 1)

Material: A single specimen (holotype) of fairly good preservation, showing the ventral surface.

Diagnosis: Disk extremely small, almost invisible; the mouth in the centre being star-shaped; 5 genital pores situated atop the buccal shields(?) in interbrachial position; arms simple, slender, sinuate, but unbranched, extending for a distance at least seven times the diameter of disk; side shields broad, more than ten times the width of vertebral ossicles.

Description: The ventral surface of the central body disk is marked in the centre by the star-shaped mouth, each mouth slit measuring 2 mm in length and 0.3 mm in breadth. Around the oral opening occur 5 buccal plates(?), each of which is perforated at its top—such perforations most probably serve as genital openings. Arms sinuate, composed of a series of plates, but plates near the buccal cavity are indistinct, while a few mm away they are well-

shown. Two rows of side shields stand out conspicuously; they are lobe-like and are joined towards the middle line of arms and partially enclose the vertebral ossicles. In the middle portion of the arm 5 vertebral ossicles in each row occur in 10 mm, and they stand side by side instead of being alternated as in the case of other species. Each side shield measures 2 mm long, 1 mm broad; the middle ossicles are extremely narrow and are composed of two halves of vertebra. No ventral shields are seen. Judged from the narrow slit between the two side shields, the ventral shields would be very small, if they existed at all in life. Lying adorally near the base of each side shield is an ambulacral pore. No other features are observed.

Discussion: The new species is similar to the Liassic form, *Ophioderma tenuibrachiata* Forbes of England in general shape, size, curvature of arms and the five genital pores at the buccal margin, but it differs from the latter in the relative size of side-shields—in *O. tenuibrachiata* Forbes side shields are small, while ventral shields much larger and ambulacral pores also much larger. Our species also differs from the Rhaetic *Ophioderma bonnardi* Oppel of Germany in lacking a much expanded disk.

The absence of ventral shields in our species is rather unusual. It may be due to either wearing away of plates during fossilization, or their total absence in life and hence a more primitive feature. In view of the fact that not a single trace of ventral plate is seen even in the better-preserved portions of the arm, the writer is inclined to think that the latter explanation is more likely true. This point is considered essential in setting up the new species and the specific name refers to the cleft between the two halves of vertebral ossicles (text-figure 2).

Holotype: PGI. E0001 deposited in the Museum of the: Peking Geological Institute; field no: $\frac{A}{T}$ —403 ($\frac{G}{T}$ —260).

图 版 I 說 明

上图 *Ophioderma schistovertebrata*, sp. nov. 全型腹視 $\times 3$.

下图 同上素描, $\times 3$.

Explanation of plate

Upper. *Ophioderma schistovertebrata* sp. nov., $\times 3$. (oral view of the holotype)

Lower Sketch of the holotype, $\times 3$.

