

廣西上泥盆紀几种菊石*

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(附圖版 I)

这一篇短文主要是描述茹廷鏘同志 1952—1953 年在廣西桂平縣木圭区大產、沙崗一帶上泥盆紀砂質岩系中采集的一些菊石。另外著者在橫縣六景圩附近中泥盆紀郁江層頂部采集的几塊屬於 *Lobobactrites* 一屬的标本,也描述了并包括在內。

桂平縣木圭区上泥盆紀的砂質岩系,就岩石性質而言,極似分布在廣西中东部榴江、修仁、象縣和石龍等縣的榴江系。它們的地層層位也都是位于中泥盆紀东崗嶺灰岩之上,二者之間都有間断現象。該省中东部的榴江系中从未發現过可靠的化石,因为它位于东崗嶺灰岩之上,和上泥盆紀桂林灰岩(古化灰岩)之下,一般地質学家过去一直是認為屬於中泥盆紀。这些标本虽然不是直接采自中东部确实的榴江系中,但是这些砂質岩系,既然岩性相似,地層層位和下面岩層的接触关系都相同,則这些菊石的發現很可能提供一些証据,証明中东部的榴江系也是屬於上泥盆紀的岩層。

最近侯佑堂同志描述了廣西东北部灵川縣鳳林山所產的几种介形虫,張文堂同志鑒定了一种三叶虫,都証明該处的榴江系是屬於上泥盆紀。

这些菊石研究的結果,証明廣西上泥盆紀的化石与西德和欧洲东部俄罗斯台地区同时代岩層下部的菊石很相近似,說明在上泥盆紀早期即法拉西期(Frasian)中國上泥盆紀的海水是与欧洲相接連的。

最后著者特向茹廷鏘同志表示謝意,將这些有价值的标本贈給著者研究。照像工作是我所刘雪筠同志担任的,亦表謝忱。

种 的 描 述

屬名 *Lobobactrites* Schindewolf 1932*Lobobactrites kwangsianus* Chao (新种)

(圖版 I, 圖 4—6)

这一种杆石的代表只是一塊保存很好的內模,其縫合綫很清楚地表示出这一屬的

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特征。

殼体很長而直,呈扁圓的柱狀。兩側微有扁縮現象,橫斷面呈橢圓形,腹部和脊部略窄,穹度大致相等,兩側較扁平。殼体保存部分的長度为 40 毫米,包括有 21 个气室。每一气室的高度約为 2 毫米或稍矮些。殼面的直徑約为腹背直徑的五分之四。側面的直徑在 40 毫米的長度內,由近尖端的 7 毫米增至近口端 8.6 毫米。腹背面的直徑在同一長度內由近尖端的 5 毫米增至 6.4 毫米。

縫合綫呈弯曲狀,由腹部的一个 V 形腹叶,兩個腹側面的兩個呈直角形鞍部,兩個側面的寬而淺的側叶和一个寬圓的脊鞍所組成。体管頸的長度,在近尖端是气室高度的二分之一,到近口部部分增至气室高度的三分之二。

產地 and 时代:这一种的标本和下一种的标本都是采自橫縣六景圩附近,湘桂鐵路六景車站北旁郁江層的頂部頁岩中,与 *Calceola* 和許多珊瑚及腕足类同產。

注釋:这一种杆石与这一屬的屬型即 *Lobobactrites ellipticus* (Frech) 的区别是它的体壳較粗大和它的縫合綫上側叶的斜度較小。它与北美所產的 *L. clavus* (Hall) 的区别是它的殼体更較扁,气室較矮,隔壁(梯板)較密些。*L. timanicus* Schindewolf 的特征是它的兩側叶有不同的斜度,而另外一种即 *L. gurichi* (Rhezak) 則是一种体壳很小的种,更不能相比。这一种杆石親屬最近的种是澳洲南部中泥盆紀所產的 *L. inopinatus* Teichert, 但是它的殼体的橫斷面則为卵形,气室較高,隔壁較稀。

登記号:正型 8172。

Lobobactrites nanningensis Chao (新种)

(圖版 I, 圖 1—3)

这一种杆石与前一种共產,它也是一塊內模,但它保存的部分只有前一种的一半長約为 20 毫米。它的殼体很似前一种,也是長而直,呈扁圓柱狀,兩側面略扁,但是它的橫斷面不是橢圓形而为卵形,腹部較背部稍寬,并具有突出的腹脊,兩側界有淺溝紋,这是前一种所未見到的現象。腹背直徑在 20 毫米的由近尖端 6 毫米至近口端增至 7 毫米;在同一距離內,側面的直徑由 4.6 毫米增至 5.5 毫米。

气室的高度与前一种約相等,即高約 2 毫米,縫合綫的形狀也很似,即由一 V 形的腹叶,一膝狀的腹側鞍,一寬而淺的側叶和一高而寬的脊叶組成。

產地 and 时代:与前一种相同。

注釋:这一种杆石著者最先原拟与前一种列为一种,但由于它的橫斷面呈卵形,腹部并有一条不太顯著的脊稜,表示它不同于前种乃別为一独立的种。

登記号：正型 8171。

屬名 *Eobeloceras* Schindewolf, 1936

Eobeloceras anguisellatum Chao (新種)

(圖版 I, 圖 17—18)

這一種菊石的標本只有一塊破碎的印模，但是它大部分的縫合綫和一部分的住室已能保存下來，因此，使著者能給以種和屬的比較正確的鑒定。這一種菊石的形狀為外卷型，具有很寬的臍部。全殼共包括五個旋輪，旋輪增高率很均勻。住室的長度約大於最外一旋輪之半，表面光滑未見任何裝飾紋的痕迹。

縫合綫在大部分的旋輪上都有保存，並且都很清楚。每一縫合綫每邊的外綫部分由一個被分割的腹鞍，兩個側葉和少數的，一般是兩個，分化不太明顯的助葉組成。所有的鞍部都具有尖的頂部。

產地 and 時代：這一種菊石惟一的標本系採自桂平縣木圭區大產村附近的上泥盆紀的砂質頁岩中。

注釋：這一塊菊石列入 *Eobeloceras* 一屬中只是因為它的縫合綫與 *E. iynae* (Clark) 的非常近似。在其他共產的 *Beloceras* 的標本中，所有的縫合綫上的偶生葉都是兩個或三個，而在這一塊標本，即到成年期也是只有一個。它的輔助葉的數目也較少，一般只有兩個，而且分化地也不明顯。兩個側葉的形狀與 *E. iynae* 的側葉非常相似，但偶生葉則比較窄狹而尖銳。著者未能看到 *E. multiseptatum* (von Buch) 的描述和圖，但就 A. K. Miller 氏所提到的，這一種的縫合綫的鞍部的頂都是圓形的，因此它們是不同種的，可以區別的。

登記号：正型 8178。

屬名 *Beloceras* Hyatt 1883

Beloceras acutum Chao (新種)

(圖版 I, 圖 12—16)

這一種菊石的標本共有三塊，其中一塊是印痕，其他一塊大部為印痕，惟內部的幾個旋輪為內模，二者的縫合綫都清晰可見。第三塊雖為整體，可能為一幼年期殼無縫合綫，因其殼形頗似前兩塊標本，亦暫列入同種中。但其腹部則呈平截狀。

第一塊標本 (圖 12) 為半外卷形，其住室部分未見保存，但就外旋輪的接合綫來推斷，其長度約大於最外一旋輪的三分之二。臍部的寬度約為殼體直徑的三分之一。表

面有無飾紋不得而知。

縫合綫保存情形很好，尤其在最外一旋輪的外部更為清楚。每一外縫合綫的側面由許多稜狀的鞍部和葉部組成，其中以主葉最長，向內圍和外圍的葉部依次漸減。在偶生葉部分共有三個，在側面內部共有 4—6 個葉部。這些縫合綫在內部幾個旋輪上，葉部分布很均勻，到最外一旋輪的外部則變為拥挤。

第二塊標本(圖 14, 15)大部為最外一旋輪，即住室部分的印痕和內一旋輪的全部，由這一塊標本所示，住室的長度稍大於最外一旋周。內一旋輪的內模表示殼表面相當扁平，中間微凸。更幸運的是它的腹部也保存下來呈稜形，而這是歐洲各地所產的標本所未能見到的。

縫合綫的分布很均勻，惟每一邊葉部的數目較第一塊標本略少些，在偶生部分只有兩個葉，在主葉以內共有 3—4 個葉部。鞍部和葉部的形狀與第一塊標本上的相似。

產地 and 時代：三塊標本都是采自廣西桂平縣木圭區大產村西南四里處上泥盆紀砂質岩碎石中。

注釋：在這一屬的已知五個種中，*Beloceras praecursor* Frech 和 *P. multilobatum* Beyrich 都是比較內卷的，它們的縫合綫都具有更多的尖端的鞍部和葉部。它們與廣西這一種標本完全不同。

B. denckmanni Wdkd. 是一種更厚的菊石，雖然也是它的臍部較寬，有些似廣西這一標本，但是它的外旋輪的高度增長很快，二或實非同種。關於 Sandberger G. 和 Sandberger F. 兩氏所描述的 *B. sagittarium* 一種，著者未能見到原著，僅依 Miller 氏 1938(p. 133)所抄繪該種的縫合綫觀之，其鞍部和葉部的數目也很多，絕不似廣西的標本所示者。最後一種為蘇聯梯滿 (Timan) 地方所產的 *B. kayseri* (Holzapfel). 它的旋輪增長很均勻而有規律，兩側面略近平行，臍部相當寬，而且縫合綫上的鞍部和葉部的數目和形狀都與廣西所產的相似，所不同者只是廣西所產的第二塊標本上的腹圍具有稜狀腹部，而這一現象在梯滿的標本上，則為平截狀。

登記號：8175, 8176, 8177。

屬名 *Ponticeras* Matern 1929

Ponticeras regulare Chao (新種)

(圖版 I, 圖 10—11)

這一種菊石是根據一塊相當破碎的標本而建立的，它只有完整的個體的多半部，但內部的幾個旋輪都保存得很好，最外一旋輪，尤其是住房部分大部已破碎了。

殼體很小,在保存的部分,直徑約為 8 毫米,其整體的直徑可能亦不超過 10 毫米。殼體共有四個半旋輪,旋輪的增長率自幼年期到老年殼都很均勻,旋輪的橫斷面略呈圓形,惟脊部微有凹痕。腹部和兩側面都呈均勻的凸形,臍緣部分亦呈寬圓狀,無明顯的臍緣。住房大部已不見,只保存一部,但就保存的部分和破的痕迹使我們仍能判斷出它的長度約大於最外一旋輪長之半。殼皮大部已蝕去,就保存下來的部分所見,其表面很光滑,無任何裝飾紋。

縫合綫保存很清楚,每一縫合綫由四個葉部和相同數目的鞍部組成。腹葉很寬并較側葉長些,下端被一中央鞍稍微割裂,外鞍高且寬,位於腹側部分。側葉較鞍部為寬,位於脊側部分,亦即臍緣部分。內部的脊葉和內側葉的形狀略似腹葉及外側葉,惟稍短而窄。在修理標本時,外旋輪曾一度破裂,所見脊葉亦相當寬,惟較腹葉稍短些,下部亦漸變窄。兩內側葉亦較外側葉窄小些。

產地 and 時代: 同前一種。

注釋: 這一種菊石的外貌與屬型即 *Ponticeras aequabilis* 很相似,惟殼體遠較它的小些。根據 Beyrich 和 Miller 所繪的縫合綫,屬型的腹葉下部被一寬型的中央鞍分裂成為二支葉與 *Manticoceras* 一屬中的許多種相似,而在廣西一種菊石的腹葉的下端則只有很淺的溝紋,代表中央鞍。這一特征亦可區別二者。

登記號: 8174。

Ponticeras kwangsiense Chao (新種)

(圖版 I, 圖 7—9)

這一種菊石的標本只是一塊相當小的內模,其內部的幾旋輪已經被移去未見,留有一中孔,只保存了外部兩個旋輪,包括住房的一部分和內一旋輪的氣房部分。

殼形呈厚的外卷型,腹部很寬,兩側很凸,脊部微被內一旋輪陷入,成為相當寬的凹陷帶。旋輪的增長率,尤其是它的寬度增長很快;輪環的橫斷面呈扁豆狀,其寬度遠大於高度。殼的直徑約為 10 毫米。臍部寬而淺,約占殼體直徑的五分之二。住房已破壞一部分,僅就保存的部分而言,其長度已達最外一旋輪的一半以上,全部長度可能更大些。殼的表皮已不存在,就內模的情形推斷,表皮可能很光滑。

縫合綫很清楚。每一縫合綫只有四個葉部和相同數目的鞍部。腹葉相當寬大,向後微尖,後端為一淺小的中央鞍蝕進稍許,在腹側部分各有一個相當高的鞍部,側葉很寬,位於臍壁上和稍外部分,頂部完整呈圓形。脊部凹陷部分為脊葉所在地,較腹葉略短小些,這種形象因內部旋輪已移去,清晰可見到。

產地 and 时代: 同前一种。

注釋: 就著者現在所知, 这一屬只包括兩個已知的种, 即屬型 *Ponticeras aequabilis* Beyrich 和北美愛奧瓦州(Iowa)所產的 *P. stainbrookii* Miller。前者为一較大型的种, 具有規則的旋輪, 根据魏德肯德 (Wedekind) 所表示的縫合綫, 它的腹叶被一較深的中央鞍所分割成为二个呈三岔狀頗似許多 *Manticoceras* 一屬的种。廣西这一种的縫合綫与北美 *P. stainbrookii* 的非常相似, 惟該一种的旋輪側面上具有許多低而圓的橫环, 而这一种的旋輪則完全是光滑的。这一点足可做为二者区别的重要点, 且無任何困难。

登記号: 8173。

屬名 *Manticoceras* Hyatt 1883

Manticoceras kweipingense Chao (新种)

(圖版 I, 圖 19—22)

这一种菊石共有兩塊标本, 一塊大些但比較破碎, 只保存了最外一旋輪的气室一大部分。另一塊小些的标本保存地比較完整些, 有全部的气室和一部分的住室。二塊标本都是內模, 縫合綫都很清楚。

殼体相当小, 略近內卷, 旋輪肥胖, 具有圓弧形的腹部, 而微有窄縮現象。旋輪的橫断面略呈三角形的盔狀, 側面很凸, 其最大厚度位于臍緣部分。臍緣顯著呈圓弧狀, 臍部的寬度約等于殼体直徑的五分之一。

殼的表皮大部已被蝕去, 只保存了一小部分, 这一小部分所示其表面相当光滑, 只具有很細微的、呈 S 形的生長綫紋。

縫合綫为这一屬的标准形狀即每边由一个寬大的三岔形腹叶, 一个寬而圓的鞍部和一个短的側叶組成。側叶位于臍緣上, 其下端呈圓形。

產地 and 时代: 这一种菊石的兩塊标本都是采自桂平縣木圭西南 40 里沙崗村南上泥盆紀的砂質岩層中, 下距底部約 50—60 米。

注釋: 在这一种的兩塊标本中, 小些的一塊可能代表幼年期殼, 它的腹部很圓未見如大些标本上的变窄的現象。这一种菊石同后面所描述的都与 *Manticoceras intumescens* Beyrich 的幼年期壳有些相似。但詳細比較之后, 我們可以發現廣西这一种菊石与 Beyrich 氏的正型标本(1837, pl. 2, fig. 3)有顯著不同之点。在他的正型的标本上, 旋輪的橫断面略呈四方形, 腹部很寬, 而廣西这些标本的腹部較窄些, 橫断面的高度則稍矮些, 腹部也圓些。 *M. ammon* Keyserling 一种菊石与这一种虽然也有些相似, 但是它較寬的臍部足資区别。另外北美洲一种菊石与廣西这一种最相近似的是 *Manticoce-*

ras 的屬型, 即 *M. simulator* (Hall), 但是它較寬的臍部也足以區別二者。廣西這一种菊石的形狀也與 *M. kindlei* Miller 有些相似, 但是它更較肥胖的旋輪和更較圓的臍緣是有顯著區別的。

登記号: 正型 8179, 副型 8180。

Manticoceras cf. cordatum Sandbergers Wdkd.

(圖版 I, 圖 25—27)

這一种菊石的標本只有一塊, 保存很好, 但只有氣室部分而無住室。它被包括在這種內是因為它的旋輪很高, 兩側面略扁平, 橫斷面略呈高三角形的緣故, 而這幾點特征正是 *Manticoceras cordatum* 所具有的。

殼體的形狀呈扁餅形, 几近內卷, 具有一窄小的臍部, 約為殼體直徑的六分之一。最外一旋輪的增高率遠較內部諸旋輪為大。腹部窄而圓, 臍緣寬圓。

縫合綫也是這一屬的標準類型。每一縫合綫的外部包括一個寬型的三分的腹葉, 一個高而寬的外側鞍和一個寬型的側葉位於臍緣上。下端為圓形。

產地 and 時代: 采自桂平縣木圭區大產村附近的礦石堆中, 屬上泥盆紀。

注釋: 廣西這一种的標本的形狀與西德馬丁山 (Martenberg) 所產的 *M. cordatum* 很有些相似, 但是它的外側鞍稍寬些。依據魏德肯德氏所描繪的橫斷面, 西德所產的腹部多少有些平截現象。另外赫爾札波非爾 (Holzapfel) 曾圖示了梯滿地區几塊幼年壳, 定名為 *Manticoceras intumescens* (1899, pl. 1, figs. 3a-c, figs. 5a-b)。這些標本的輪環高較大, 兩側面扁平, 腹部也很窄, 與同產的大型模殊異, 而反似廣西所產的這一种。

登記号: 8182。

Manticoceras? sp. (新種)

(圖版 I, 圖 23—24)

這一种菊石的殼體相當小, 呈半外旋的、厚扁餅形狀。內部的旋輪具圓形的剖面, 兩側面和腹部都很凸。但向外隨着旋輪的增長, 兩側面逐漸變扁, 腹部亦逐步變窄, 到最外一旋輪的外部則變為稜形。

表面飾有規則的、拗曲形的粗橫綫紋。這些綫紋在內部几个旋輪的腹部只是稍向後彎曲的綫, 隨着壳體的增長, 向外逐漸彎曲成為顯著的彎曲綫, 同時在它的兩側部分生成顯著的、向前方伸展的綫紋。這種綫紋表示這種菊石生存時, 腹部原具有一寬大的腹缺口, 亦即表示它是慣於游泳的。

縫合綫未見。

產地 and 时代：同前一种。

注釋：这一种菊石的代表只是一塊相当破碎的标本，它的縫合綫未見保存。其种屬的关系很难确定，但是由于它的壳形和表面上的裝飾紋很似北美洲紐約州愛瑞縣(Erie County) 上泥盆紀所產的 *Manticoceras sororium* Clark, 所以暂时列入这一屬中。它們的形狀和裝飾紋，大体上都很相似，惟廣西这一种菊石的臍部略为窄小而已。

登記号：8181。

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NOTES ON SOME DEVONIAN AMMONOIDS FROM SOUTHERN KWANGSI

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(with one plate)

The present account is intended to place upon record a small cephalopod faunule from the vicinity of Mokwei in the Kweiping district, southern Kwangsi. The materials were collected by Mr. T.C. Ju in 1952-1953 from the siliceous beds of the "Liukiang Series". Some specimens belonging to the genus *Lobobactrites* from the early Middle Devonian shales near Liuking in Hunghsien are also described in this paper.

The age of the Liukiang Series in central and eastern Kwangsi was formerly regarded as belonging to the late Middle Devonian, but no characteristic fossils have ever been found in that vast region. The discovery of these ammonoids in the southern part of the same province may afford evidence in dating the geological age of the Liukiang Series at least for the present. The evidence of the Ammonoids now available is in favor of an Upper Devonian age.

The study of these ammonoids reveals that the fauna of the Upper Devonian in Kwangsi is closely related to those of early Frasian or Oberdevon I of Western Germany and Northern Russia.

DESCRIPTION OF SPECIES

Genus *Lobobactrites* Schindewolf 1932

Lobobactrites kwangsiensis Chao sp. nov.

(Pl. I, figs. 4-6)

This species is represented by a single, well preserved internal mold showing the characteristic suture-lines of the genus.

The shell is long, slender and straight with the lateral sides moderately compressed, giving an elliptical whorl-section. Both the dorsal and ventral sides are well rounded with equal curvature. The preserved part of the shell is about 40 mm long, consisting of 21 camerae; the height of each camera is therefore slightly lower than 2 mm. The width of the diameter is about four-fifths of the ventro-dorsal

diameter, which increases from 7 mm at the adapical to 8.6 mm at the adoral end. The lateral diameter increases from 5 mm to 6.4 mm at the same distance.

The suture-line is sinuate, consisting of a V-shaped ventral lobe, a high sharply bending ventro-lateral saddle, a broad shallow lateral lobe and a rather high broadly rounded dorsal saddle. The septal neck attains a length about half the height of the camerae in the adapical portion and reaches to two-thirds or more in the adoral portion.

Horizon and Locality: From the *Calceola* bed in the uppermost part of the Yükiang formation near the Luking station in the Hungchien district along Hsiangkwei Railway.

Remarks: The species is distinguished from the genotype of the genus, *Lobobactrites ellipticus* (Frech), by the larger size of the conch and by the less oblique and sinuation of the lateral lobes. It cannot be confused with the Middle Devonian form *L. clavus* (Hall) of New York in its more strongly compressed whorl section and in the more densely spaced septa. *L. timunicus* Schindewolf of the lower Upper Devonian of northern Russia is characterized by its asymmetrical lateral lobes, and *L. gurichi* (Rhezak) of the Middle Devonian of Poland is a much smaller form with a distinct ventral keel. The most closely related species is *L. inopinatus* Teichert from the Middle Devonian of Australia, which can be differentiated from the present species by its oval cross-section and by its more widely spaced septa.

Cat. No. 8172.

Lobobactrites nanningensis Chao sp. nov.

(Pl. I, figs. 1-3)

Associated with the preceding form is a much smaller specimen of an internal mold attaining a length of about 20 mm. The shell is quite like that of the preceding form, being long and slender with slightly compressed lateral sides. But the whorl-section is somewhat different, being oval in outline instead of elliptical with the ventral side slightly narrowly rounded. The ventral side is marked with an incipient carina bounded by two grooves. The ventro-dorsal diameter increases from 6 mm at the adapical to 7 mm at the adoral end. Its lateral diameter increases from 4.6 mm to 5.5 mm at the same distance.

The height of the camerae is about the same as that in the preceding species. Its suture-line is essentially alike.

Horizon and Locality: same as the preceding species.

Remarks: This form was first classified with the preceding species. Its oval-shaped cross-section instead of an elliptical one and the presence of an incipient carina on the dorsal sides leads the writer to consider it as an independent form.

Cat. No. 8171.

Genus *Eobeloceras* Schindewolf 1936

Eobeloceras anguisellatum Chao sp. nov.

(Pl. I, figs. 17-18)

This form is represented by an impression of internal mold with most of the sutures and part of the body chamber preserved. The form is widely umbilicate consisting of five volutions increasing very regularly in height. The length of the body chamber reaches more than half of a complete volution of the last whorl. The surface of the test is perfectly smooth.

The sutures are clearly shown in the penultimate as well as in the inner whorls. Each consists of a divided ventral saddle with one adventitious angular lobe on each side, two lateral lobes and a few low, less individualized auxiliary lobes on each external side. All the saddles are angular.

Horizon and locality: From the Upper Devonian siliceous shales near Tachan, Mokwei, in the Kweiping district.

Remarks: This specimen is referred to the genus *Eobeloceras* simply because its sutures are quite similar to those of *E. iynx* (Clark) in having only one adventitious lobe at full maturity and fewer auxiliary elements, which are less individualized than those of *Beloceras*. The first and second lateral lobes are essentially similar to those of *E. iynx*, but the adventitious lobe is much narrower and angular. It differs from *E. multiseptatum* (von Buch) in the angulation of the saddles.

Cat. No. 8178.

Genus *Beloceras* Hyatt 1883

Beloceras acutum (Holzapfel)

(Pl. I, figs. 12-16)

Representatives of this species are three specimens, among which one is an impression and the other is an internal mold. The sutures are well exhibited in all of them. A third one (Pl. I, fig. 16) probably representing a young form is also referred to this species on account of the general similarity of the shell in which

the sutures are not shown.

The first specimen (Pl. I, fig. 12) is moderately evolute with the body chamber not preserved. Lines of umbilical joint shows that its length attains more than two-thirds of the last whorl. The width of the umbilicus reaches to one-third of the diameter. Surface sculpture unknown.

The suture-lines are well preserved, especially in the outer portion of the last whorl. It is composed of numerous angular lobes and saddles, with the main lobe much longer than the adventitious and auxiliary elements. There are three adventitious lobes on each side of the venter and 4-6 lobes in the auxiliary series. They are well spaced in the early part of the penultimate whorl, becoming crowded towards the last whorl.

The second specimen (Pl. I, fig. 14) shows an impression of large part of the body chamber and a part of internal mold of the penultimate whorl. The body chamber seems to be longer than a complete volution of the last whorl. The preserved part of the internal mold is rather flat with gentle convexity. The ventral portion is also preserved, which is rather acute.

The sutures are well spaced, consisting of only two adventitious lobes and three to four auxiliary lobes besides the main lobe.

Horizon and locality: From the siliceous beds of Upper Devonian, 2 km southwest of Tachan village, near Mokwei in the Kweiping district.

Remarks: In the five known species of this genus, *Beloceras praecursor* Frech and *B. multilobatum* Beyrich are more involute forms with more numerous angular lobes and saddles. *B. denckmanni* Wdkd. is a much thicker form with wide umbilicus and fewer whorls growing rapidly in height. The writer was unable to see the description and illustrations of Sandbergers on the species *Goniatites sagittarius*, which was included in *Beloceras* by Miller in 1938, but its suture-line, as reproduced by Miller (1938, p. 133), shows also more lobal elements both in the adventitious and auxiliary series. The most closely related form is *B. kayseri* (Holzapfel) from Timan, in which the whorls grow regularly with nearly parallel sides forming a moderately wide umbilicus and sutures are quite similar, consisting of fewer lobal elements. Slight difference only lies in the more acute venter, as is indicated on the second specimen.

Cat. No. 8175-8177.

Genus *Ponticeras* Marten 1929*Ponticeras regulare* Chao sp. nov.

(Pl. I, figs. 10—11)

This species is established upon a single, rather fragmentary specimen, consisting of more than half a complete example.

Shell very small, measured only 8 mm across the umbilicus. Whorls increasing very regularly throughout different stages, slightly embracing and shallowly impressed by the preceding one. Whorl section more or less circular in outline with evenly rounded venter and lateral sides. Umbilical edge broadly arched. Surface perfectly smooth. Length of body chamber more than one half of the last volution in which the outermost part is broken away.

The suture-lines are well shown, each consisting of only four lobes and corresponding number of saddles. The ventral lobe is very wide, considerably longer than the laterals. It is slightly notched by a shallow medial saddle at the posterior end. The outer saddle is rather high and wide, located on the ventro-lateral part. The lateral lobe is much wider than the saddle and is situated on the dorso-lateral part. The internal lobes and saddles are similar to the external ones, but slightly narrower. The dorsal lobe is rather wide and shorter than the ventral one, tapering posteriorly, which is directly observed by breaking of the outermost whorl during the preparation of the sutures. The two internal laterals are also narrower and shorter than the external ones.

Horizon and locality: Same as the preceding form.

Remarks: This form differs from the genotype *Ponticeras aequabilis* in the small size. According to Beyrich, the ventral lobe in that species is deeply divided by a medial saddle, giving a shape of *Manticoceras* type. It is only slightly notched in the present form.

Cat. No. 8174.

Ponticeras kwangsiense Chao sp. nov.

(Pl. I, figs. 7—9)

The unique example referred to this species is a rather small, internal mold, consisting of only two outer volutions with the inner whorls broken away leaving a large perforation in the center. Part of the septate portion and the part of the

body chamber are preserved.

The form is thickly discoidal, evolute with broad, greatly flattened venter and very convex lateral sides. The dorsal side is slightly impressed by the inner whorl forming a wide, concave zone in the dorsal part. The whorls increase very rapidly. Cross-section of the whorl is reniform in outline with the whorl height much smaller than the width. The umbilicus is very wide occupying about two-fifths of the diameter, which is 10 mm measured across the umbilicus. The preserved part of the body chamber attains a length slightly less than one half of the last volution, and it may be much larger. The surface of the shell is very smooth, both in the septate part and on the body chamber.

The suture-lines are well shown. Each consists of only four lobes, the ventral, the dorsal and two lateral lobes. The ventral lobe is rather broad, tapering posteriorly and is notched by a shallow medial saddle. A high saddle is located on the ventro-lateral part. The lateral lobe is very broad with rounded posterior end and is situated on the umbilical wall. A dorsal lobe is present in the impressed zone, which can be observed in the perforation where, the inner whorls are broken away.

Horizon and locality: Same as the preceding form.

Remarks: Only two species of the genus are known, *Ponticeras aequalis* (Beyrich) and *P. stainbrooki* Miller. The former is a much larger form with regular whorls. According to Wedekind, its external suture is quite similar to most species of *Manticoceras* with a more deeply notched saddle and is trifid in shape. The suture-line of the present form is quite similar to that of *P. stainbrooki* of Iowa, but the presence of numerous annulations on the lateral side in that form distinguishes it from this species without any difficulty.

Cat. No. 8173.

Genus *Manticoceras* Hyatt 1883

(= *Gephyroceras* Hyatt)

Manticoceras kweipingense Chao sp. nov.

(Pl. I, figs. 19-22)

Of this species the writer has only two representatives of internal mold in the collection. The larger one is a fragment, consisting of a large part of the camerate part of the last whorl; the smaller is a much better preserved specimen with all the septate part and a part of body chamber shown.

The form is rather small, more or less involute with greatly inflated whorls and

well rounded venter, tending to become narrow. The whorl-section is more or less triangular. The lateral sides are strongly convex with the greatest width at the umbilical edges, which are distinct and rounded. The width of the umbilicus reaches about one-fifths of the diameter. Most part of the test are exfoliated, while the preserved part shows that it is quite smooth with very fine, sigmoidal lines of growth.

The sutures are well exhibited in both specimens, which are characteristic of the genus, being composed of a wide, tripatate ventral lobe, a high, wide rounded saddle on the lateral side and a short lobe on the umbilical edge with rounded posterior end.

Horizon and Locality: Both specimens of this species came from the lower middle part of the siliceous beds near Shakang, 20 km south of Mokwei in the Kweiping district.

Remarks: The smaller specimen with rounded whorls may represent an immature form of the larger one, in which the narrowing of the ventral portion has become more remarkable. Both this species and the next described form are allied to *M. intumescens* Beyrich. Comparing these specimens with Beyrich's type specimen (1837, Pl. II, fig. 3), one can find their remarkable distinction in the more or less quadratic section in his type specimen and the slightly narrower umbilicus in the Kwangsi examples. The whorl section is also slightly lower, with more rounded venter. *Manticoceras ammon* Keyserling is somewhat similar to this form. Its much wider umbilicus serves as an available criterion to distinguish them. The most closely related form is the genotype of the genus, *M. simulator* (Hall) of North America, but its much wider umbilicus makes it desirable to distinguish them. The general shape of the shell also recalls that of *M. kindlei* Miller differing from it in the more inflated whorl section and in the more broadly rounded umbilical shoulder.

Cat. No. Holotype 8179, Paratype 8180.

Manticoceras cf. *cordatum* Sandbergers em. Wdkd.

(Pl. I, figs. 25-27)

A single rather well preserved example is referred to this species on account of its high, more or less triangular whorl section with greatly flattened lateral sides. It consists of only the septate part of the shell, whereas the body chamber is completely broken away.

The form is lenticular in outline, more or less involute and discoidal with a small umbilicus attaining a width of only about one-sixth of the diameter.

The outermost whorl increases more rapidly than the inner ones. The venter is narrowly rounded. The umbilical shoulder is broadly rounded.

The suture-line is also characteristic of the genus, being composed of a wide tripartate ventral lobe, a high broad outer lateral saddle and a broad lateral lobe at and above the umbilical edge.

Horizon and Locality: From the rock debris near Tachan, southwest of Mokwei in the Kweiping district, "Liukiang Series", Upper Devonian.

Remarks: The general shape of the Kwangsi example is quite similar to *M. cordatum* of Martenberg, Western Germany, differing from it only in the presence of wide lateral saddles. The whorl section of this species given by Wedekind is also characterized by a more or less truncated venter. Holzapfel has figured some young forms with high whorls, flattened sides and narrow venter from Timan under the name *M. intumescens* Beyrich (1899, Pl. I, 3a-c; Pl. II, 5a,b) which are different from the typical form, and can be compared with the Kwangsi example.

Cat. No. 8182.

Manticoceras? sp. nov.

(Pl. I, figs. 23-24)

The shell is rather small, moderately evolute and thickly discoidal in shape. The early whorls are very convex with well rounded venter. The venter becomes narrower and narrower as the sides are more compressed laterally and finally a keel is formed at the outermost part of the last volution.

The surface is ornamented with regular, flexuous remarkable varices. These varices bend slightly backward on the venter in the inner volutions, becoming more pronounced towards the outermost one. These backward curves indicate the presence of a broad hyponomic sinus, and the animal must have lived in swimming habit.

The suture-lines are not shown.

Horizon and locality: Same as the preceding form.

Remarks: The basis upon which the description of this species is made is a single, fragmentary example, which is referred to this genus on account of its close resemblance to *Manticoceras sorrium* Clark of Erie County, New York, both in whorl shape and surface sculpture, but unfortunately its suture-lines are not shown. The Kwangsi species differs from it only in the more involute character.

Cat. No. 8181.

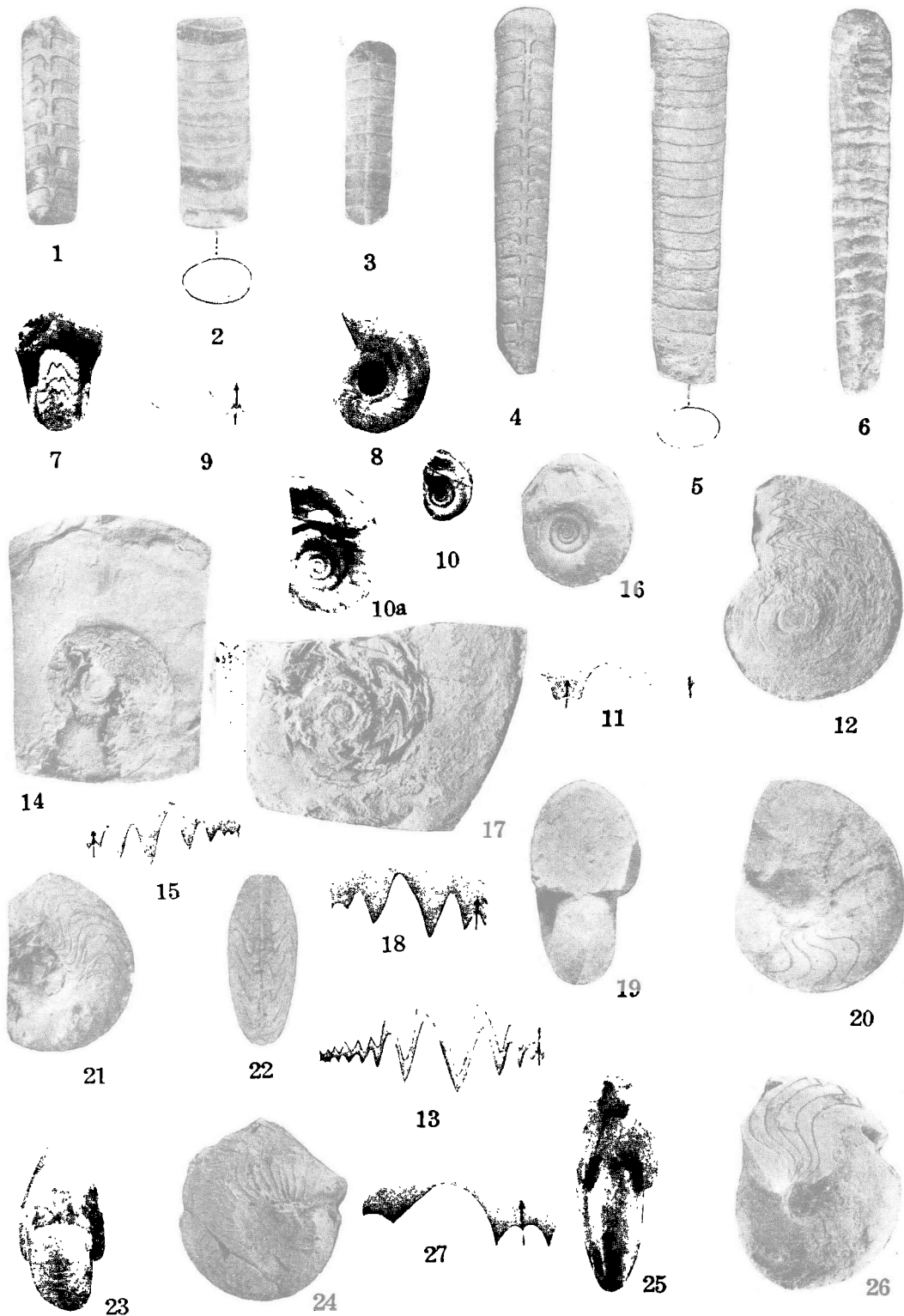


圖 版 說 明

- 1—3. *Lobobactrites nanningensis* Chao(新种)
1. 腹面; 2. 側面; 3. 背面。放大 1.5 倍。正型 登記号: 8171。
廣西橫縣六景車站北旁, 中泥盆紀郁江層上部。
- 4—6. *Lobobactrites kwangsiensis* Chao(新种)
4. 腹面; 5. 側面; 6. 背面。放大 1.5 倍 正型 登記号: 8172。
產地和时代 同上。
- 7—9. *Ponticeras kwangsiense* Chao(新种)
7. 正面; 8. 側面, 放大 2 倍; 9. 縫合綫放大 2 倍。正型 登記号: 8173。
廣西桂平木圭大產村西南, 上泥盆紀榴江系。
- 10—11. *Ponticeras regulare* Chao(新种)
10. 側面放大 1.5 倍; 10a. 同一标本放大 3 倍; 11. 縫合綫放大 4 倍。正型 登記号: 8174。
產地和时代 同上。
- 12—16. *Beloceras acutum* Chao(新种)
12. 第一塊标本的側面, 原大; 13. 縫合綫放大 2 倍。登記号: 8175。
14. 第二标本的側面, 原大; 15. 縫合綫放大 3 倍。登記号: 8176。
16. 第三标本, 幼年期壳, 原大。登記号: 8177。
產地和时代 同上。
- 17—18. *Eobeloceras anguisellatum* Chao(新种)
17. 正型的側面, 原大; 18. 縫合綫放大 3 倍。登記号 8178。
產地和时代 同上。
- 19—22. *Manticoceras kweichowense* Chao(新种)
19—20. 正型的正面及側面放大 1.5 倍。登記号: 8179。
21.—22. 副型的正面及腹面。 登記号: 8180。
產地和时代 廣西桂平木圭區沙崗村南上泥盆紀榴江系。
- 23—24. *Manticoceras?* sp.
23—24 正型的正面及側面, 表示生長綫, 放大 1.5 倍。登記号: 8181。
產地和时代 同上。
- 25—27. *Manticoceras* cf. *cordatum* Sandberger et Sandberger
25. 正面; 26. 側面放大 1.5 倍; 27. 縫合綫放大 2 倍。登記号: 8182。
產地和时代 廣西桂平木圭區大產村附近礫石堆中, 上泥盆紀榴江系。