

主要是 *L. kueichouensis* Yü 拥有較多的隔壁, 2—3 列的鱗板; *L. spiniformis* Yü 則隔壁为数更多, 鱗板泡沫带有刺状隔壁, 为数 2—3 列, 稀疏而下凹的床板, 中軸也特別粗大; *L. tingi* Chi 与本新种的大小、形态, 虽然有多少类似, 但前者具更粗大而狹长的单列鱗板, 稀疏而不規則的床板, 中軸也較粗大。与 *L. unica* Y. et H. 相比, 具有較薄而平直的外壁, 較多的鱗板泡沫, 平緩的床板和甚薄的中軸和本新种不同。本新种为追念标本的采集人徐瑞麟, 茲命名为 *L. hsüjiulingi*。

产地及时代: 广西早石炭世, 詳細地点及层位未悉: 种型薄片存于北京大学地质地理系, 编号为广西 972 a—b。1930 年徐瑞麟采集。

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ON SOME NEW TETRACORALS FROM THE CARBONIFEROUS OF CHINA

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Although Lower Carboniferous tetracorals of China have long been extensively described, those of younger Carboniferous have not received the due attention that they seem to deserve. The present paper intends to deal with some scattered collections from the Carboniferous of North and South China, which have been put at the author's disposal in the course of many a year.

They consist mainly of unusual forms of Caninid, Lithostrotionid, Aulophyllid and Lonsdaleoid corals. Amongst the seven species here described and illustrated, six of them are new and one is *nomen nudum*. They may be listed as follows:

Caninia ovata Yoh sp. nov.

Arachnastraea kaipingensis (Grabau)

Arachnastraea tzupoensis Yoh sp. nov.

Paracarruthersella bryocolumellata Yoh gen. & sp. nov.

Carruthersella yaotsunensis Yoh sp. nov.

Koninckophyllum shuichengense Yoh sp. nov.

Lithostrotionella hsüjulingi Yoh sp. nov.

With the exception of *Arachnastraea kaipingensis* and *A. tzupoensis* which are widely distributed in the Middle Carboniferous of North China, the other species appear far less abundant either in Lower or in Younger Carboniferous.

Description of species

Family Caniniidae Hill, 1938

Caninia ovata Yoh sp. nov. 1960

(Pl. I, figs. 1a—d)

Medium-sized solitary coral, the corallum of which is entombed in light grey limestone matrix and the external characters become not observable.

Transverse section: Elliptical in outline, with longer diameter of 24 mm. and shorter diameter of 15 mm. Epithecæ fairly thin; septa generally short, leaving a wide central space inside. They are alternately long and short with $42 + 42$ in number. Major septa not equally developed, ranging from 4 to 6 mm. in length, while the minor septa are very short about 0.5—1 mm. in length and only confined to the dissepimentarium. Particularly in the cardinal quadrants the major septa are with conspicuous lanceolate dilation in tabularium; the cardinal septum is shortened, forming a closed cardinal fossula by down-curved margins of the tabulae; while all of the septa in the counter quadrants are thin, straight and rather regularly disposed. Dissepimentarium very narrow, with flat and concentric sections of interseptal dissepiments. Tabularium wide, occupying about $1/2$ of the longer diameter, the tabulae appearing as a few slightly convex curves.

Longitudinal section: Corallum cylindrical, slightly curved. Calyx deep with a beaker-like calicular pit. Dissepimentarium very narrow, consisting chiefly of 4 rows of irregularly elongate and vertically disposed dissepiments with their convex sides directed inwards. Tabularium fairly wide, with many complete but irregularly arranged tabulae which are either flat or convex or even concave, but usually supported by arched periaxial tabellae.

Comparison: This new species agrees with *Caninia mapingense* Lee et Yü and *C. ornata* Formichev in the lanceolate dilation of the major septa, the closed cardinal fossula, the narrow dissepimentarium and the fairly wide tabularium; but differs from *C. mapingense* Lee et Yü in having an elliptical corallum, still shorter and more numerous septa, much stronger dilation in the cardinal quadrants and very irregularly disposed dissepiments and tabulae; from *C. ornata* Formichev in the elliptical corallum, far more numerous septa, wider dissepimentarium with dissepiments not herring-boneshaped and finally the irregularly grouped tabulae.

Horizon and locality: This new species was found from the Maping limestone of the Upper Carboniferous in the vicinity of Liuchow, Kwangsi, in association with numerous *Pseudoschwagerina* sp. Collected by Hsü Jiu-ling in 1930.

Family Lithostrotionidae d'Orbigny 1851
***Arachnastraea kaipingensis* (Grabau) Yoh 1960**

(Pl. II, figs. 2a—b)

Corallum massive, entombed in the light grey limestone matrix and the external characters become unobservable.

Transverse section: Corallum cerioid-astreoid, composed of nearly equal-sized pentagonal or hexagonal corallites averaging 5—6 mm. in diameter. Epitheca very thin, sharply zigzag and sometimes partially depressed. Septa equally thin as the epitheca, alternately long and short, the difference of their lengths being very insignificant, usually slightly dilated in the dissepimentarium and 11 + 11 in number. Major septa generally meeting in the axis, the cardinal and counter septum being as a rule confluent with each other, and slightly thickened at the middle, suggesting the formation of a plate-like columella. Dissepimentarium rather wide, sclerotheca well-defined and dissepiments appearing more or less convex axially or sometimes flat.

Longitudinal section: Dissepimentarium rather wide, occupying ca. 2/3 the diameter of a corallite, consisting of 3—4 rows of upwardly arched, unequal-sized but horizontally disposed dissepiments. Columella weak, slightly flexuous but persistent. Tabularium narrow, tabulae unequal in length, complete or incomplete but entirely tent-like and gently inclined externally.

Comparison: The author finds no difference between the present species and *Lithostrotion kaipingense* figured by A. W. Grabau in his "Stratigraphy of China" part I, p. 239, fig. 161 published in 1923—24, but remained undescribed as a *nomen nudum* for more than thirty years. Moreover he had during that time wrongly referred the Tangshan limestone in which this species occurs to Lower Carboniferous of age. Obviously the present genus can be favourably separated from *Lithostrotion* (s.s.) in their typically thin epitheca and septa, very slightly thickened plate-like columella, and wide dissepimentarium characterized by the horizontally disposed dissepiments. Therefore the author would like here to revise the generic determination but retain the specific name that were given by him. The present form differs from *A. manchurica* Yabe et Hayasaka, as in the latter the majority of the epithecae are reduced, the columella becomes much thinner and almost indistinguishable, and lastly the dissepimentarium consists of only two rows of irregular dissepiments. Our species differs from *A. molli* (Stuckenberry) in the much reduced epithecae, the ill-defined inner wall, the more incomplete and highly inclined tabulae and also the not horizontally disposed dissepiments. With *A. ischernyschewi* Formichev, the present form does not agree with the thamnasterioid corallum, the stronger columella, the steeply inclined dissepiments and the more crowded, conical tabulae of the former.

Horizon and locality: Grabau's original specimens were obtained in the Tangshan limestone near Tangshan coal mines, Hopei Province and lost subsequently during the Sino-Japanese War. The present specimens described were collected in 1956 by a field party of the Institute of Geology, Academia Sinica from the Hsüchiachuang limestone in the upper part of Penchi series, Middle Carboniferous in Kueishan of Tzupohsien, Shantung Province.

***Arachnastraea tzupoensis* Yoh sp. nov. 1960**

(Pl. II, fig. 3a—c)

Corallum large, massive, embedded in the light grey limestone matrix and the external characters not observable.

Transverse section: Corallum composed of irregularly polygonal corallites, five to six sided, averaging 8—10 mm. in diameter. Epitheca distinct throughout, very thin, and sharply zigzag. Septa equally thin as epithecae, all of them un-thickened, alternately long and short, and $9 + 9$ to $10 + 10$ in number. Nearly all of the major septa meeting in the axis, especially the cardinal and counter septa being obviously confluent to form a straight line, but in the middle of which no indication of dilation is noticeable and thus the plate-like columella which is characteristic of this genus becomes hardly recognizable. Minor septa obviously shorter than the major, sometimes only $2/3$ of the latter in length. Dissepiments rather loosely spaced, usually flat; sclerotheca not thickened and indistinct. In the axial region, tabulae appear as rather dense and peripherally convex plates in the interseptal spaces.

Longitudinal section: Dissepimentarium wide, occupying $2/3$ the diameter of the corallite, consisting of 3—4 rows of rather uniform-sized, upwards arched and horizontally disposed dissepiments. Columella weak, strongly flexuous but persistent. Tabularium occupying ca. $1/3$ of the diameter, consisting of tent-like, rather loose, generally complete but gently inclined tabulae.

Comparison: This new species may be favourably compared with *A. kaipingensis* (Grabau), but differs from the latter in the quite distinct epithecae with which the corallites are well-bounded, in the less numerous and the not yet thickened septa, the unobscured but persistent columella, the rather regularly disposed dissepiments and the more complete, less crowded tabulae. This species presents also certain similarities to *A. molli* (Stuckenberg), but differs from the thamnasterioid corallum, the axially inclined dissepiments, the more incomplete and cystose tabulae of the latter.

Horizon and locality: Same as the Preceding.

Family Aulophyllidae Dybowski, 1873**Genus *Paracarruthersella* Yoh gen. nov. 1960**(Genotype: *P. bryocolumellata* Yoh, 1960)

Diagnosis: Solitary, small and cylindrical coral. Epitheca conspicuously thickened by marginal septal stereozone, followed by narrow vesicular dissepimentarium not radiated by septa. Central column oval in outline, composed of rather spongy, irregularly thickened, moss-like lamellae and tabellae, but in which the median plate can be distinguished. Intermediate septate zone wide, in which the septa are wholly dilated; tabulae rather complete and as a rule inversely conical.

Discussion: The erection of this new genus is based mainly upon the unusual type of axial structure which neither resembles that solid central column of *Carruthersella* Garwood with tightly packed septal lamellae abutting on a medial plate, nor that large almond-shaped central column of *Amygdalophyllum* Dun et Benson, made of dilated axial ends of major septa welded with intercalated septal lamellae to form a medial plate; nor that irregular central column of *Carcinophyllum* Thomson et Nicholson, with a short medial plate and twisted septal lamellae

forming an anastomosing reticulate structure. Besides, this new genus is invariably characterized by having a wide tabularium with complete and inversely conical tabulae, while the abovementioned genera possess on the contrary either domed or transverse tabulae. Nevertheless, our new genus shows characteristics closely allied to *Carruthersella* Garwood and accordingly will be named *Paracarruthersella* Yoh.

***Paracarruthersella bryocolumellata* Yoh, gen. & sp. nov. 1960**

(Pl. I, figs. 2a—d, 3a—b)

Small cylindrical single coral, the coralla of which are embedded in the limestone matrix and the external characters become not observable.

Transverse section: Elliptical in outline with longer diameter of 14 mm. and shorter diameter 11 mm. Epitheca thin but thickened by the marginal septal stereozone, composed of some 58 short, blunt and tooth-like projections. Dissepimentarium very narrow, consisting of a few large elongate vesicles usually not extended by septa, while this zone is narrow enough both major and minor septa are still continuous from the outer wall to the tabularium. The intermediate septate zone wide, occupying about half of the shorter radius. Septa alternately long and short, all conspicuously dilated and 29 ± 29 in number. Major septa very long, nearly reaching the central column but not in direct contact with it and leaving an extremely narrow space between the inner ends of major septa and the central column. Minor septa fairly short, usually appearing on the inner margin of the sclerotheca. Within the intermediate septate zone only a few flat sections of tabulae are visible. Central column large, more or less spongy and elliptic in outline, the longer diameter of which may attain $1/3$ of the corallum, composed of numerous irregularly thickened lamellae and tabellae, all mixed together like a moss plant, but not tightly packed and welded into a solid axial column like that of *Carruthersella* Garwood (Pl. I, fig. 5a). In the central column a short medial plate and some 10 flexuous lamellae on each side can be recognized. Between the narrow dissepimentarium and the wide septate zone it is marked by a very pronounced sclerotheca which is formed by the strong thickening of dissepiments. Cross section of another specimen (Pl. I, 3a—b) presents also an elliptic outline with a longer diameter of 18 mm., the internal structures of which are quite the same, except that the septa increase to 32 ± 32 in number.

Longitudinal section: Corallum cylindrical with a diameter of 11 mm. and a preserved length of 23 mm. Epitheca strongly thickened; vesicular dissepimentarium very narrow, consisting of one single row of elongate, unequal-sized, steeply inclined dissepiments. The convex sides of dissepiments strongly thickened, resulting in the formation of a pronounced sclerotheca. Tabularium wide, consisting of inversely conical tabulae, which are mostly complete and steeply inclined. Central column strong, with medial plate and tabellae intensely and irregularly thickened, but a little spongy and not yet welded together into a solid axial structure.

Comparison: This new form agrees with *Carruthersella fongi* Yü and *C. compacta* Garwood in the conspicuous marginal septal stereozone, the narrow lonsdaleoid dissepimentarium and the wide tabularium, but strikingly differs from them in the presence of a spongy and moss-like central column and the inversely conical tabulae.

Horizon and locality: Occurs in the Maping limestone of Upper Carboniferous in the vicinity of Liuchow, Kwangsi; detailed locality unknown. Coll. Hsü Jiu-ling in 1930.

***Carruthersella yaotsunensis* Yoh sp. nov. 1960**

(Pl. I, figs. 4a—c)

Corallum solitary, small, ceratoid and slightly curved; epithecal surface with fine growth lines alternated by rather coarse growth wrinkles, both of them crossed by longitudinal interseptal ridges. The adult specimen measures 32 mm. in length and a maximum diameter of 14 mm. at the distal end.

Transverse section: Circular in outline, with epitheca thickened by marginal septal stereozone from which produce in the inner side numerous short, triangular, tooth-like projections. Dissepimentarium irregular and occupying ca. $2/3$ of the radius; lonsdaleoid dissepiments only partially developed, in which the septa do not extend. As a whole the dissepiments usually of unequal size with their convex side axially directed. Septa alternately long and short, entirely dilated and more or less flexuous. Major septa long, with the exception of the counter septum not extended to axis; minor septa rather short, ca. $1/2$ the length of major; both major and minor septa being 30 ± 30 in number. Central column solid and elliptic in outline, consisting of a distinct medial plate and approx. 10 lamellae on each side, all tightly packed and welded together by intense thickening of stereoplasm. One pointed end of the central column directed to the cardinal septum, while the other being united with the counter septum resembling the form of a pendulum. Tabularium rather narrow, occupying ca. $1/3$ of the radius, generally dense and flat in section. Dissepimental inner wall conspicuous and strongly thickened.

Longitudinal section: Dissepimentarium wider than tabularium, with 5 rows of irregularly elongated, steeply inclined vesicular dissepiments. Tabularium rather narrow, consisting of almost incomplete, inversely conical and cystose tabulae, but becoming rather flat in the surrounding of the central column. Central column strong and solid with a diameter of 2 mm.; only the medial plate is visible under microscope.

Comparison: This new species can be in some respects comparable with *Carruthersella compacta* Garwood and *C. fongi* Yü, but strikingly differs from them in the much wider and rather poorly developed lonsdaleoid dissepimentarium, obviously narrower tabularium composed of the incomplete, cystose and inversely conical tabulae, and lastly the close connection of the counter septum with the central column.

Horizon and locality: In the whitish pure limestone of late Lower Carboniferous from Yaotsun, Kiangyuh sien, Szechuan. Collected by a field party of Szechuan Petroleum Prospecting Bureau in 1953.

***Koninckophyllum shuichengense* Yoh sp. nov. 1960**

(Pl. II, figs. 1a—b)

Corallum large, phaceloid, composed of rather closely packed cylindrical corallites, but not in direct contact, usually separated from one another with a distance less than the diameter of a corallite. Epithecal surface with strong and coarse interseptal ridges crossed by fine growth lines and irregular growth wrinkles. The specimen here concerned measures 8 cm. in height of the corallum and 10 cm. in width.

Transverse section: Corallites being generally compressed and distorted into irregular elliptic outlines. Those undistorted corallites of some other specimens are circular in section and

each measures 8.5—9.5 mm. in diameter. Epitheca thickened by septal stereozone with triangular bases of septa in its inner margin. Dissepimentarium narrow, consisting of irregular and axially arched dissepiments; sclerotheca well-developed and strongly thickened. Septa alternately long and short, very flexuous, and varying from $18 + 18$ to $22 + 22$ in number. Major septa fairly long, but not extended to the axis; minor septa rather short, usually penetrating through the sclerotheca. Within the dissepimentarium the minor septa being almost reduced to discontinuous lobes but reappeared as short ridges in the periphery of tabularium. Sometimes the basal parts of the major septa may also be interrupted by the vesiculose dissepiments, and there a lonsdaleoid zone is formed. Palicolumella lath-shaped, more or less thickened, sometimes thin and flexuous, but all being supported by a few short septal lamellae.

Longitudinal section: Epitheca fairly thick; dissepimentarium irregular, consisting of 2—4 rows of elongate, unequal-sized and steeply inclined dissepiments. Tabularium rather wide; tabulae domed, usually complete but gently sloping peripherally. Columella strong and persistent, slightly flexuous and conspicuously thickened.

Comparison: From features shown in transverse sections of our new species, it presents some similarities with *K. grabaui* Chi. Especially so are the thickened epitheca, the conspicuous inner wall, and the strong palicolumella. But the latter differs in having a large solitary corallum, very long major septa but fairly short minor septa and the dissepimentarium being not lonsdaleoid.

Horizon and locality: In the "Wangchiapa limestone" of middle carboniferous, at Dumuchai of Shuichenghsien, Kueichou. Collected by Ho Ni-hsian and the author in 1950.

Family Lonsdaleiidae Chapman 1893 *Lithostrotionella hsüjulingi* Yoh sp. nov. 1960

(Pl. III, figs. 1a—c)

Corallum cerioid, epitheca distinct, and corallites comparatively small. The original specimen were lost during the Sino-Japanese War. The following description is based on the thin slices of a well-preserved specimen.

Transverse section: Adult corallites pentagonal or hexagonal, distinctly separated by strong, zigzag epithecae, averaging 6 mm. in diameter. Peripheral dissepimentarium typically vesiculose, not radiated by septa, but being represented as a number of triangular bases along the inner margin of the epithecae, and consisting of a few irregular-shaped and unequal-sized dissepimental vesicles. The intermediate septate zone is well-bounded by a distinctively single-lined polygonal-rounded inner wall, within which the septa are alternately 'long and short, regularly arranged, and $16 + 16$ in number. Major septa rather long but not reaching the axis; minor septa very short, ca. $1/3$ the length of the former; all of them remained not dilated. Columella lath-shaped, more or less thickened in the middle, not infrequently supported by a few minute septal lamellae and its one end being united with the counter septum.

Longitudinal section: Epitheca fairly thick; dissepimentarium narrow, not uniform in width, composed of one single row of unequal-sized, rather elongate, steeply inclined vesicles. Tabularium wide, occupying ca. $1/2$ of the diameter, consisting chiefly of complete and crowded conical tabulae, and for a vertical distance there included ca. 16 tabulae. Palicolumella rather thick, solid and persistent, but frequently flexuous.

Comparison: So far amongst the Carboniferous species of *Lithostrotionella* from South China, *L. kueichouensis* Yü, *L. spiniformis* Yü, and *L. tingi* Chi can favourably be compared with our new species, but all the former present remarkable differences from the latter. First of all, *L. kueichouensis* Yü is characterized by having more numerous septa and 2—3 rows of vesicles; *L. spiniformis* Yü, by having still more septa, 2—3 rows of vesicles carrying with spine-like septal ridges, less dense and more or less sagging tabulae, and also stronger columella; while lastly *L. tingi* Chi, by having more coarse and elongate vesicles in the dissepimentarium, loose and irregular tabulae and stronger columella. Moreover *L. unica* Yabe et Hayasaka differs from our new form in having rather thin and straight epitheca, more dissepimental vesicles, very gently inclined tabulae and very thin columella. This new species is named in honor of the collector, the late geologist Hsü Jiu-ling.

Horizon and locality: Occurs probably in the Lower Carboniferous formation of Kwangsi, detailed locality unknown. Coll. Hsü Jiuling in 1930.

图版说明

图版 I

- 图 1. *Caninia ovata* Yoh, 新种种型, 广西晚石炭世马平石灰岩。
1a. 横剖面, $\times 1$; 1b. 纵剖面, $\times 1$; 1c. 横剖面, $\times 2$; 1d. 纵剖面, $\times 2$ 。
- 图 2. *Paracarruthersella bryocolumellata* Yoh, 新属新种的属型和种型, 产地、时代同上。
2a. 横剖面, $\times 1$; 2b. 纵剖面, $\times 1$; 2c. 横剖面, $\times 2$; 2d. 纵剖面, $\times 2$ 。
- 图 3. *Paracarruthersella bryocolumellata* Yoh, 新种副型, 产地、时代同上。
3a. 横剖面, $\times 1$; 3b. 横剖面, $\times 2$ 。
- 图 4. *Carruthersella yaotzunensis* Yoh 新种种型, 四川早石炭世“上总长沟统”。
4a. 横剖面, $\times 1$; 4b. 横剖面, $\times 2.5$; 4c. 纵剖面, $\times 2.5$ 。
- 图 5. *Carruthersella compacta* Garwood, 英国英格兰西北部早石炭世早期, 复制比较。
5a. 横剖面, $\times 3$; 5b. 纵剖面, $\times 3$ 。

Explanation of Plate I

- Fig. 1. *Caninia ovata* Yoh sp. nov., holotype, Maping limestone, Upper Carboniferous, in the vicinity of Liuchow, Kwangsi Province.
1a. Transverse section, $\times 1$; 1b. longitudinal section, $\times 1$; transverse section, $\times 2$; 1d. longitudinal section, $\times 2$.
- Fig. 2. *Paracarruthersella bryocolumellata* Yoh; gen. et sp. nov., Genoholotype, locality and horizon as preceding.
2a. Transverse section, $\times 1$; 2b. longitudinal section $\times 1$;
2c. transverse section, $\times 2$; 2d. longitudinal section, $\times 2$.
- Fig. 3. *Paracarruthersella bryocolumellata* Yoh gen. et sp. nov., paratype, locality and horizon as preceding.
3a. Transverse section, $\times 1$; 3b. transverse section, $\times 2$.
- Fig. 4. *Carruthersella yaotzunensis* Yoh sp. nov., holotype, Zunchangkou formation, late Lower Carboniferous, Yaotzun, Kiangyuh sien, Szechuan Province.
4a. Transverse section, $\times 1$; 4b. transverse section, $\times 2.5$; 4c. longitudinal section, $\times 2.5$.
- Fig. 5. *Carruthersella compacta* Garwood, early Lower Carboniferous, NW. England, reproduced for comparison.
5a. Transverse section, $\times 3$; 5b. longitudinal section, $\times 3$.

图版 II

- 图 1. *Koninckophyllum shuichengense* Yoh, 新种种型, 贵州水城独木寨中石炭世“王家坝石灰岩”。
- 1a. 复体横剖面, $\times 2$; 1b. 个体纵剖面, $\times 2$.
- 图 2. *Arachnastraea kaipingensis* (Grabau), 迭型, 山东淄博奎山馬家草沟中石炭世本溪統上部徐家庄灰岩。
- 2a. 复体横剖面, $\times 2$; 2b. 复体纵剖面, $\times 2$.
- 图 3. *Arachnastraea tzupoensis* Yoh 新种种型; 产地、时代、层位同上。
- 3a—b. 复体横剖面, $\times 2$; 3c—e. 复体纵剖面, $\times 2$.

Explanation of Plate II

- Fig. 1. *Koninckophyllum shuichengense* Yoh sp. nov., holotype, “Wangchiapa limestone”, Middle Carboniferous, Dumuchai, Shuichenghsien, Kueichou Province.
- 1a. Transverse section of corallites, $\times 2$; 1b. longitudinal section of one corallite, $\times 2$.
- Fig. 2. *Arachnastraea kaipingensis* (Grabau), lectotype, Hsuehiachuang limestone in the upper part of Penchi series, Middle Carboniferous, Kueishan, Tzupohsien, Shantung Province.
- 2a. Transverse section of the compound corallum, $\times 2$; 2b. longitudinal section of the same, $\times 2$.
- Fig. 3. *Arachnastraea tzupoensis* Yoh sp. nov., holotype, locality and horizon as preceding.
- 3a—b. Transverse sections, $\times 2$; 3c—e. longitudinal sections, $\times 2$.

图版 III

- 图 1. *Lithostrotionella hsüjulingi* Yoh 新种种型, 广西早石炭世, 詳細产地与层位未悉。
1a. 复体横剖面, $\times 1$; 1b. 复体横剖面, $\times 2$; 1c. 复体纵剖面, $\times 2$ 。
- 图 2. *Petalaxis portlocki* M. Edw.-Haime, 一个个体的萼部, 約 $\times 4.5$, 英国早石炭世高山石灰岩, 复制比較。
- 图 3. *Petalaxis maccoyana* M. Edw.-Haime var. *belinskiensis* Formichev, 苏联頓内茨盆地早石炭世晚期, 复制比較。
3a. 复体横剖面, $\times 2$; 3b. 复体纵剖面, $\times 2$ 。
- 图 4. *Lithostrotionella castelnaui* Hayasaka 美国維琴尼亚西部米西西比紀, 复制比較。
4a. 个体横剖面, $\times 2$; 4b. 个体纵剖面, $\times 2$ 。
- 图 5. *Lithostrotion (Siphonodendron) rossicum* Stuckenberg, 苏联俄罗斯地台早石炭世, 复制比較。
5a. 复体横剖面, $\times 4$; 5b. 个体纵剖面, $\times 4$ 。

Explanation of Plate III

- Fig. 1. *Lithostrotionella hsüjulingi* Yoh sp. nov., holotype, probably from the late Lower Carboniferous formation of Kwangsi Province, detailed locality unknown.
1a. Transverse section of the compound corallum, $\times 1$; 1b. transverse section of the same, $\times 2$; 1c. longitudinal section of the same, $\times 2$.
- Fig. 2. *Petalaxis portlocki* M. Edw.-Haime, calyx of one corallite, $\times 4.5$ approx., Mountain limestone, Lower Carboniferous, England, reproduced for comparison.
- Fig. 3. *Petalaxis maccoyana* M. Edw.-Haime var. *belinskiensis* Formichev, late Lower Carboniferous of Donetz Basin, U.S.S.R., reproduced for comparison.
3a. Transverse section of corallites, $\times 2$; 3b. longitudinal section of the same, $\times 2$.
- Fig. 4. *Lithostrotionella castelnaui* Hayasaka, Mississippian, West. Virginia, U.S.A., reproduced for comparison.
4a. Transverse section of one corallite, $\times 2$; 4b. longitudinal section of the same, $\times 2$.
- Fig. 5. *Lithostrotion (Siphonodendron) rossicum* Stuckenberg, Lower Carboniferous of Russian Platform, U.S.S.R., reproduced for comparison.
5a. Transverse section of the corallites, $\times 4$; 5b. longitudinal section of the same, $\times 4$.