

ADDITIONAL NOTES ON THE PALÆONTOLOGY OF
QUEENSLAND.

PART I.—PALÆOZOIC.

(Plates XXXIX.—XLI.)

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SURVEY OF NEW SOUTH WALES.)

1.—INTRODUCTION.

During the preparation and publication of the "Geology and Palæontology of Queensland,"* a large number of additional fossils were obtained by Mr. R. L. Jack, Government Geologist for that Colony, his Assistant, Mr. W. H. Rands, and the Survey Collector, the late Mr. James Smith, of Rockhampton. These came to hand too late for incorporation in the work named, but the Linnean Society having generously undertaken the publication of an elaboration of this additional material, it is my intention to offer a few notes to the Society, as occasion may arise, supplementing them with information gleaned from the Queensland gatherings of Mr. George Sweet, Brunswick, Melbourne, who was good enough to place his collection in my hands. I shall also take the opportunity of correcting a few inaccuracies into which I fell, when engaged in the work above referred to.

2.—THE RAGLAN LIMESTONE.

In the "Geology and Palæontology of Queensland and New Guinea,"† my co-writer (Mr. R. L. Jack) places the Raglan Lime-

* The Geology and Palæontology of Queensland and New Guinea. By R. L. Jack, &c., and R. Etheridge, junr., &c. (3 vols. Brisbane, 1892.)

† P. 89.

stone on the horizon of the Gympie beds (Permo-Carboniferous), chiefly relying apparently on the opinion of the Survey Collector, the late Mr. James Smith. At the same time I pointed out in a foot-note that the unpublished fossils, so far as I had seen them, appeared to indicate the Burdekin beds as the more appropriate horizon to which the Raglan Limestone should be referred. The fossils collected by Mr. Smith consist of a massive *Favosites*, and Cystiphylloid corals apparently referable to the Genus *Actinocystis*.

The *Favosites* present all the characters of the specimens described by Prof. H. A. Nicholson and the writer* from the Burdekin beds of the Broken River, as *F. gothlandica*, in flat, or more or less hemispherical expansions. The thin walls of the corallites are well preserved, the latter being very regularly pentagonal, hexagonal, or at times even heptagonal. The corallites measure one line or less, in diameter. The tabulæ are mostly horizontal, a few oblique, or convex upwards, again here and there a rolling or imperfect and vesicular tabulum may be seen, but interlocking and strictly concave tabulæ I have not observed. The walls have undergone so much alteration during their conversion into granular calcite that all trace of pores is obliterated.

The *Actinocystis* will be found described on p. 524.

The fossils are from Langmorn Creek, Raglan, twelve miles west of Keppel.

Under the Gympie Series was also provisionally included the Chillagoe Limestones, near Zillmanton.† Mr. Jack made the following remarks on this subject:—"Near the Dorothy Mine I obtained some specimens of Corals and Encrinite stems, but from their state of preservation I do not think that the most expert Palæontologist could determine either genus or species. Similar fossils were obtained from the quartzites associated with the limestones near Zillmanton, but in no more recognizable condition. . . . It may be observed that the Mitchell and Palmer Limestones bear a very marked lithological resemblance to the

* *Ibid.*, p. 50.

† *Ibid.*, p. 120.

limestones of Chillagoe. . . . The limestones of both regions, as well as the associated strata, present, as regards organic remains, a most striking contrast to the Devonian Limestones of the Broken River and the Burdekin, both of which teem with Corals and Brachiopods in perfect preservation."

As Mr. Jack very justly observed, the calcareous stems from the Dorothy Mine, and the silicious from Zillmanton, are past recognition, although in the former case the entire limestone is made up of fragments of stems and separated ossicles. But we now possess this much information as to the age of these limestones. A portion of the Zillmanton stone bears the impression, in excellent preservation, of the surface of a colony of *Heliolites porosa*, on which both sets of tubes, the autopores and siphonopores, are distinctly visible. Now, as *Heliolites* is a genus not known above the Middle Devonian, it would seem very probable that the Chillagoe and Zillmanton Limestones will also fall to the same horizon as those of the Burdekin Downs and Reid's Gap, near Townsville, &c.

3. DESCRIPTIONS OF THE SPECIES.

DEVONIAN.

Class—ACTINOZOA.

Order—ZOANTHARIA.

Section—ZOANTHARIA PERFORATA.

Family—FAVOSITIDÆ.

Genus—ROMINGERIA, *Nicholson*, 1879.

(Tabulate Corals Pal. Period, p. 114).

ROMINGERIA FOORDI, *Eth. fil.*

R. Foordi, *Eth. fil.*, Geol. and Pal. Q'land and N. Guinea, 1892,
p. 56, t. 1, f. 18.

Obs.—Another example of this interesting form occurs in Mr. Sweet's Collection. It is of a less branching habit than that

figured above, and the corallites are more bunched together; several mural pores are also visible within the weathered mouths of the latter. The characters of this specimen seem to confirm the reference of the fossil to *Romingeria*.

Loc. and Horizon.—Reid's Gap, near Townsville (*G. Sweet*, Colln. Sweet, Melbourne). Middle Devonian.

Section—RUGOSA.

Group—CYATHOPHYLLOIDEA.

Family—CYATHOPHYLLIDÆ.

Genus—CYATHOPHYLLUM, *Goldfuss*, 1826.

(Petrefacta Germaniæ, i., 1 Theil, p. 54.)

CYATHOPHYLLUM SWEETI, *sp. nov.*

(Pl. XL., figs. 3 and 4; Pl. XLI., fig. 1.)

Cyathophyllum, *sp. ind.*, *Eth. fil.*, *Geol. and Pal. Q'land and N. Guinea*, 1892, p. 59, t. 3, f. 11 and 12.

Sp. Char.—Corallum turbinate, or slightly cornute, stout, about two inches long; section oval; wall thick; septa from fifty-eight to sixty; primary septa extending to the centre, where they intermingle, a few from the sides confluent round the fossula, straight or direct in the outer dissepimental area, curved in the tabulate area; slightly thickened with stereoplasma, but the primordial septa not visible. Counter septum exceedingly long, ventral, extending quite to the centre of the calice. Secondary septa extending a little beyond the dissepimental zone. Fossula not particularly specialised, unless by a lateral tabulate depression, containing five primary septa, including the counter septum. Dissepiments plentiful, forming a peripheral zone of about half

* In the "Geology and Palæontology of Queensland and N. Guinea," the heading "Family Cyathophyllidæ" was inadvertently left out before "Genus Cyathophyllum," on p. 59.

the width of the corallum, those forming the inner half of the zone always convexly angled outwards, but those in the outer moiety imperfect and variously directed. Rugæ corresponding to the septa.

Obs.—Specimens in Mr. Sweet's Collection enable me to give a more precise diagnosis of the *Cyathophyllum* occurring in the Devonian beds near Townsville, than did the originals collected by Mr. R. L. Jack. I now propose for it the name of *C. Sweeti*. This is a form of no great outward distinctive features, but possesses a very remarkable long counter septum. The septa within the dissepimental zone are direct, although slightly flexuous, and do not evince any curvature until this zone is passed, and even then not all of them. One group in particular, one of the alars, curves round the supposed fossula. A peculiar character, not readily explicable, is a bifurcation of the septa within, and slightly without the dissepimental area, unless it be an abortive attempt at dissepimental growth. The longest septum, which I take to be the counter septum, is on the ventral or concave side.

No definite theca is present, but the thickened proximal ends of the septa form the outer wall, in places nearly one millimetre thick.

Loc. and Horizon.—Reid's Gap, near Townsville (*G. Sweet*, Colln. Sweet, Melbourne). Middle Devonian.

Group—ZAPHRENTOIDEA.

Family—ZAPHRENTIDÆ.

Genus—CAMPOPHYLLUM, *Edw. and Haime*, 1850.

(*Mon. Brit. Foss. Corals*, Pt. 1, p. lxviii.)

CAMPOPHYLLUM GREGORII, *Eth. fil.*

(Pl. XL. fig. 2.)

C. Gregorii, *Eth. fil.*, *Geol. and Pal. Q'land and N. Guinea*, 1892, p. 60, t. 3, f. 15-18.

Sp. Char.—Corallum elongate, two and a half inches long, cylindrical, or at times rather tortuous, gradually tapering to a

pointed base ; section circular. Calice deep with high erect walls. Septa about thirty-four, delicate, with an equal number of secondary lamellæ. Proper wall, or theca, much thickened, with immediately within a single circle of strong quadrangular vesicles, succeeded by a number of ordinary lenticular vesicles. Tabulæ irregular and incomplete, sometimes extending almost from wall to wall, at other times lenticular, and either close together or separated by marked loculi.

Obs.—I take this opportunity of figuring in section a more complete specimen than I was formerly able to do. *C. Gregorii* is a very peculiar species, of which much of the structure has yet to be elaborated. The calice is deep and nearly as broad at the bottom as at the top.

Loc. and Horizon.—Reid's Gap, near Townsville (*G. Sweet*, Colln. Sweet, Melbourne). Middle Devonian.

Group - CYSTIPHYLLOIDEA.

Family—CYSTIPHYLLIDÆ.

Genus—CYSTIPHYLLUM, *Lonsdale*, 1839.

(Murchison's Silurian System, p. 691.)

CYSTIPHYLLUM AUSTRALE, *Eth. fil.*

C. americanum, var. *australe*, *Eth. fil.*, Geol. and Pal. Q'land and N. Guinea, 1892, p. 58, t. 3, f. 13 & 14.

Obs.—The corallum in this species is shortly turbinate, or cornute, becoming elongate, and often twisted, or curved, and at times even vermiform. It is never of any great diameter, and the surface bears regular, sharp without becoming prominent, more or less equidistant accretion rings, separated by lesser concentric laminae. The entire structure is vesicular, the vesicles variable in size but large in comparison with that of the corallum, and their walls often become much thickened. There appear to have been a thick outer wall, and an epitheca, but even the former at times

becomes vesicular. I previously recorded this as a variety of the American *C. americanum*, Hall, but I think now that perhaps it had better be entirely separated.

C. australe seems to have been a variable species as to its form. The specimen originally figured was of much larger growth, and probably represents the adult condition.

Loc. and Horizon. Reid's Gap, near Townsville (*G. Sweet*, Colln. Sweet, Melbourne). Mid. Devonian.

Genus—ACTINOCYSTIS, *Lindström*, 1882.

(Ofvers. K. Vet. Akad. Handl., 1882, No. 3, p. 21.)

ACTINOCYSTIS? TERRA-REGINÆ, *sp. nov.*

(Pl. xxxix. figs. 1 and 2.)

Sp. Char.—Corallum simple, large, cono-cylindrical. Outer zone wide, composed of successive cycles of upwardly directed vesicles; inner zone with from sixty-five to seventy septa, much thickened towards their distal ends by stereoplasma. Fossula apparently existing on the ventral side and containing a counter-septum.

Obs.—I am not aware that this genus has before been recognised in Australian rocks. The genus is typically an Upper Silurian one, but other Devonian forms have been published by Mr. F. Frech.*

I have not been fortunate enough to see a perfect corallum, and our best specimen so far as the internal structure is concerned is rather distorted in shape. The demarcation between the two zones is well marked, the outer or vesicular area diminishing rapidly in size downwards, the peripheral vesicles being the largest, and diminishing in size inwards. The septa extend to the centre of the corallum without coalescing, and not only are they thickened with stereoplasma, but the interseptal loculi become filled up, producing a more or less solid mass. The largest specimen is four and a quarter inches long, the width of the

* Dames and Kayser's Pal. Abhandlungen, 1886, Bd. iii., Heft 3, p. 107.

vesicular zone being three-quarters of an inch, and that of the septal area one and a half inches.

As compared with the British *Actinocystis cylindricum*, Lonsd.sp., our form appears to have a larger central septate area.

Loc. and Horizon.—Langmorn Creek, Raglan, twelve miles west of Keppel (*The late J. Smith*, Colln. Geol. Survey Queensland, Brisbane). Raglan Limestone (Middle Devonian).

Family—CALCEOLIDÆ.

Genus—RHIZOPHYLLUM, *Lindström*, 1865.

(K. Vet. Akad. Forhandl., 1865, No. 5, p. 287.)

RHIZOPHYLLUM, *sp.ind.*

(Pl. XLI., figs. 2 and 3.)

Obs.—A rather fine example of this genus, in all probability, although the structure as exhibited in the truncated base, and along the calicular edge is dense and non-vesicular. This would place the fossil nearer *Calceola*, were it not that the latter has a pointed base, and is said to be free. The specimen is, unfortunately, an only one, and the calice is so infilled with irremoveable matrix that a more detailed examination cannot be made. In shape it corresponds with the mature condition of *R. interpunctatum*, De Kon., with ill-preserved traces of exothecal imbricating laminae on the lateral angles, between the convex upper and flat under surface. The base is truncated, probably by fracture from the original attachment, and certainly shows no sign of any epithecate covering, but a dense homogeneous appearance.

This coral is larger than any individual of *R. interpunctatum* I have seen, but resembles it in outline. In the absence of intermediate forms it is not advisable to unite it with that species, but simply to figure it for future reference.

Dr. G. Lindström has advanced* the extraordinary opinion that *R. interpunctatum*, as figured by De Koninck, is but the

* Richthofen's Beiträge zur Pal. von China (Richthofen's China, Band iv.), 1883, Abth. 4, p. 71.

internal cast of an *Orthis*. I can assure him that such is not the case, and that I have seen similar casts associated with other examples in full possession of their calcarous envelopes.

Loc. and Horizon.—Reid's Gap, near Townsville (*G. Sweet*, Colln. Sweet, Melbourne). Middle Devonian.

PERMO-CARBONIFEROUS PLANTÆ.

Section—PHANEROGAMIA.

Class—DICOTYLEDONES.

Order—**CYCADACEÆ ?**

Family—NOEGGERATHIOPSIDÆ.

Genus—*NOEGGERATHIOPSIS*, O. *Feismantel*.

(*Pal. Indica* [*Gondwana Flora*], 1879, iii. Pt. 1, p. 23.)

(Pl. XL. fig. 1.)

Obs.—A peculiar leaf has been obtained from the Permo-Carboniferous beds near Townsville, which is tentatively referred to this genus. It is spathulate and acutely triangular, with the distal end wanting, and tapering proximally to an obtusely pointed petiole; in all, as preserved, three inches long. A median, longitudinally impressed line exists, similar to those seen in some of the late Dr. O. Feismantel's figures of Australian *Noeggerathiopsis*,* on each side of which the veins arrange themselves with a certain degree of bilateral symmetry. The veins are coarse and somewhat far apart, about fourteen on each side the median groove, and the interspaces flattened.

This leaf seems to approach nearest to *Noeggerathiopsis*, so far as the material at my command enables me to judge, but it is different from any figured by Feismantel in either his Indian, Australian, or Tasmanian Memoirs. Possibly it may be an undescribed genus.

* *Mem. Geol. Survey, N.S. Wales, Pal. No. 3, 1890, t. 21, f. 3-5.*

Loc. and Horizon.—Railway Cutting on Townsville and Charters Towers Railroad, six and a half miles from Townsville, at Stewart's Creek (*R. L. Jack*, Colln. Geol. Survey Queensland, Brisbane). Upper Bowen Series.

ANIMALIA.

Sub-Kingdom—C Œ L E N T E R A T A.

Class—ACTINOZOA.

Obs.—Four additional specimens of *Rugosa* have been obtained by Mr. Jack; three of them are from the Middle Bowen Series at Kyunga, near Banana, and were presented to the Queensland Geological Survey Collection by Mr. — Sutherland, whilst the fourth is from the same series in the type district, and was collected by Mr. Jack four and a half miles up Parrot Creek, Bowen River.

Two of the Kyunga corals possess the same robust turbinate appearance, thick wall, and stout septa as those of *Zaphrentis robusta*, De Kon., of the N.S. Wales Permo-Carboniferous. If anything, the accretion growths are a little more marked, but the rugæ are identical, and so appear to be the transverse frills ornamenting the latter. On the other hand, the septa are increased to fifty, which is a marked departure from the number present in the species named.

The third coral although of sufficiently well marked character to pass for a more slender individual of *Z. robusta*, possesses but forty-five septa. With this discrepancy, in an otherwise apparently similar series, it may perhaps be well to pause before definitely referring the specimens to *Z. robusta*, and await the advent of additional material.

The coral from the type district is also a turbinate, and little curved form, possessing fifty-eight septa. In the robustness of its habit it resembles the preceding specimens. The calice is deep with a very thick wall, the rugæ corresponding in part with the interseptal spaces. The septa in the calice are short, thick and somewhat wedge-shaped, and much thickened with

stereoplasma, but the primordial septa still plainly visible. The wall, or more properly speaking the theca, is formed by septal outgrowths infilled with stereoplasma, and its thickness, combined with the brevity of the septa, tends to impart a markedly sturdy appearance to the corallum.

These notes may tend to call the attention of Collectors to these corals, and perhaps facilitate further acquisition.

Sub-Kingdom—A N N U L O S A.

Class—CRUSTACEA.

Order—**TRILOBITA.**

Family—PRÆTIDÆ.

Genus—G R I F F I T H I D E S, *Portlock*, 1843.

(Geol. Report Londonderry, &c., p. 310.)

GRIFFITHIDES SWEETI, *Eth. fil.*

(Pl. XXXIX. fig. 3.)

Griffithides Sweeti, Eth. fil. (ms.), Mem. Geol. Survey N. S. Wales, Pal. No. 5, Pt. 2, 1892, p. 125.

Sp. Char.—General form oblong. Cephalon not fully preserved, but the glabella pyriform-oval; basal lobes oval, large and prominent, deeply divided off, with a small supplementary lobe beneath, and at outer upper end of the neck segment, which is convex, and longer fore and aft than any of the thoracic segments; surface of all lobes highly granulate. Thoracic axis very convex, of ten segments; pleuræ angularly bent downwards along the middle line. Pygidium semicircular, large; axis of twelve, and pleuræ apparently of ten segments; limb wide, convex, and well arched downwards.

Obs.—This is an abnormal form, departing both from *Phillipsia* and *Griffithides* in possessing ten instead of nine thoracic segments, and in the presence of the supplementary basal lobes on the cephalon. So far as I can see there is no clear evidence of such

supplementary lobes in Dr. H. Woodward's excellent figures of either *Phillipsia* or *Griffithides*. The one preserved is, however, very distinct in our specimen, quite separated from the basal lobe on the one hand, and the neck segment on the other. The glabella is densely ornamented with very minute prickles (pits in the cast), but although these are not certainly visible on the thorax and pygidium, still a roughening of the surface may, perhaps, indicate their former presence.

The supplementary lobe is present in some *Proeti*, such as *P. bohemicus*, Corda,* for instance; and the late Mr. J. W. Salter made the following remarks on the subject†:—"A very usual character of this genus [*Proetus*] is the possession of a strong tubercle, terminating the neck segment on each side, and nearly separated from it. Burmeister, however, in his second edition, has considered the species having this thickening, and the obscure glabella furrows more strongly marked, as forming a distinct genus, which he calls *Æonia*. McCoy had anticipated him by a few months in the name *Forbesia*, without referring to *Proetus*."

Loc. and Horizon.—Crow's Nest Creek, near Mount Morgan (*G. Sweet*, Colln. Sweet, Melbourne). Trilobite-bed, Gympie Series.

Sub-Kingdom—M O L L U S C A.

Class—BRACHIOPODA.

Family—ATHYRIDÆ.

Genus—ATHYRIS, *McCoy*, 1844.

(Synop. Carb. Limest. Foss. Ireland, p. 146.)

ATHYRIS ROYSII, *Leveillé*, *sp.*

(Pl. xxxix. fig. 4.)

A. Roysii (*Leveillé*), *Eth. fil.*, *Geol. Pal. Q'land and N. Guinea*, 1892, p. 243, t. 11, f. 15.

Obs.—I take a second opportunity of figuring an *Athyris* with circlets of attached spines, contributed in this instance by Mr.

* *Syst. Sil. Bohême*, I. Atlas, t. 16, f. 1, 6, 8, 10, 11.

† *Mem. Geol. Survey Gt. Brit.* 1858, ii. Pt. 1, p. 337.

de Vis. In the present case the spines seem to be a part of the laminar expansion, without that degree of individuality possessed by those of *A. Roysii*, but at the same time hardly exhibiting the same continuity of expansion visible in the lamellar frills of *A. planosulcata*, Phill. I therefore prefer to retain the Queensland example under the above name. The preservation of the specimen appears to represent a circular or orbicular shell, such as the previously mentioned species, rather than a transversely elliptical form similar to the N. S. Wales Permo-Carboniferous *A. ? crebri-stria*, Morris,* sp.

Loc. and Horizn.—Rockhampton District (*C. W. de Vis*, Colln. de Vis). Gympie Series.

Family—PRODUCTIDÆ.

Genus—PRODUCTUS, *J. Sowerby*, 1814.

(Min. Con., 1. p. 153.)

PRODUCTUS? *sp.ind.*

Productus, *sp.ind.(b)*, Eth. fil., Geol. Pal. Q'land and New Guinea, 1892, p. 255, t. 12, f. 15.

Obs.—In 1892 I described what was taken to be portion of a *Productus* with spine bases and a few attached spines, after the type of *P. fimbriatus*, Sby. At the same time I expressed doubt as to the reference of the specimen to that genus, and also remarked —“the spines are too coarse and much too far apart for either an *Athyris*, such as *A. Roysii*, or a *Reticularia*, like *R. lineata*.”

A further examination, through the courtesy of Mr. R. L. Jack, has led to me to doubt the propriety of referring the shell to *Productus*, and I now think that it may really be a *Reticularia*, but one possessing much larger and more widely separated spines than generally seen in *R. lineata*. It is evidently a portion of the ventral valve with a shallow sinus.

* Strzelecki's Phys. Descrip. N. S. Wales, &c., 1845, p. 279, t. 15, f. 2.

Loc. and Horizon.—Stony Creek, Stanwell, near Rockhampton (*The late James Smith*, Colln. Geo. Survey Queensland, Brisbane). Gympie Series.

Class—PELECYPODA.

Order—LUCINACEA.

Family—ASTARTIDÆ.

Genus—CYPRICARDELLA, *Hall*, 1858.

(Trans. Albany Inst., 1858, iv. Pt. 1, p. 17.)

CYPRICARDELLA RECTANGULARIS, *sp. nov.*

(Pl. XXXIX. fig. 5.)

Sp. Char.—Shell small, generally rectangular, short, rather produced antero-ventrally. Hinge line or cardinal margin short, much less than the width of the shell; ventral margin wide and rounded, graduating into the antero-ventral extremity, which owing to the deep excavation of the anterior margin appears produced; posterior margin straight, at right angles to the hinge line. Diagonal ridge prominent, but obtusely rounded; posterior slope flattened, forming almost an equilateral triangle. Surface bearing between thirty and forty regular, close, rounded, concentric rugæ, sharply bent on crossing the posterior slope.

Obs.—This little shell, referred to *Cypricardella* purely on external form, is allied to *C. bellistriatus*, Conrad, sp.,* and is also allied to *Cypricardia rhombea*, Phill.,† of the British Carboniferous Limestone, which in all probability is a *Cypricardella* also. Prof. James Hall‡ even figures a short variety of Conrad's species, very like the present shell, were it not for the produced anterior end of the latter. Still in this respect it may be compared with *C. tenuistriatus*, Hall,§ and although the before-

* Pal. N. York, 1885, v. Pt. 1, No. 2, p. 308, t. 73, f. 21.

† Ill. Geol. Yorksh., 1836, Pt. 2, p. 209, t. 5, f. 10.

‡ *Loc. cit.* t. 74, f. 7.

§ *Loc. cit.* t. 73, f. 23.

mentioned *C. bellistriatus* is a remarkably variable shell, there is no figure of Hall's showing so short an individual as *C. rectangularis*, mihi. A comparison with Phillips' *Cypricardia rhombea*,* possibly referable to the present genus, at once dispels any relation between the two forms, especially the length of the British shell from anterior to posterior.

In outline *C. rectangularis* is not unlike *Cypricardella rhomboidea*, mihi,† but in the former the antero-posterior angle is much more rectangular, and it possesses a strong diagonal ridge, absent in the latter.

Loc. and Horizon.—Rockhampton District (*C. W. de Vis*, Colln. de Vis). Gympie Series.

Order—**MYACEA.**

Family—ANATINIDÆ.

Genus—CHÆNOMYA, *F. B. Meek*, 1866.

(Pal. Up. Missouri, p. 42.)

CHÆNOMYA? *ETHERIDGEI*, *De Koninck*.

(Pl. XL. fig. 5.)

Sanguinolites Etheridgei, *De Koninck*, Foss. Pal. Nouv. Galles du Sud, 1877, Pt. 3, p. 262, t. 17, f. 2 (? t. 16, f. 2).

Chænomya? Etheridgei, *Eth. fil.*, Geol. & Pal. Q'land and N. Guinea, 1892, p. 279.

Obs.—Under the first of the above names *De Koninck* figured two bivalves, which, it appears to me, must with our present knowledge be kept distinct. If of the same species, they can only be regarded as oppositely extreme members of it. The specimen formerly described by me did not exhibit the cincture, or sulcus proceeding from the umbo to the ventral margin in each valve, but this is visible in the present example. The latter coincides

* Ill. Geol. Yorkshire, 1836, Pt. 2, t. 5, f. 10.

† Geol. Pal. Q'land, &c., 1892, t. 14, f. 15.

with De Koninck's figure, Pl. 17, f. 3, except that the posterior hinge line has a less elevation, and the cincture is less obliquely directed.

I was for a long time in doubt as to the generic identity of this and similar other bivalves found in the Permo-Carboniferous rocks of Eastern Australia, and for the want of a better resting place referred them to Meek's genus *Chænomya*. This group of shells is in accord, with the diagnosis of the latter, in every particular but two—the presence of the cincture, and the “broad shallow sinus” of the pallial line. The former point is not, from its variability in this group, one of much moment, and even the pallial line of our shells may be very openly sinuate, but is so faintly impressed that it is difficult to distinguish it. At the same time the posterior gape of the valves would lead one to expect a sinupalliate character. Should any other observer be in a better position to demonstrate the generic relations of *Chænomya*? *Etheridgei*, and its allies, more correctly, I am quite open to conviction. Perhaps, after all, as in so many other cases in Australian Palæontology, a new generic name will be the more appropriate course.

The presence of the cincture indicates an alliance with *Grammysia*.

Loc. and Horizon.—Woodleigh Creek, one and three quarter miles above Bent's Farm (*W. H. Rands*, Colln. Geol. Survey Queensland, Brisbane).

Genus—EDMONDIA, *De Koninck*, 1842.

(Descrip. Anim. Foss. Terr. Carb. Belgique, 1842, p. 66.)

EDMONDIA ? SMITHII, *sp.nov.*

(Pl. xxxix. fig. 6.)

Undescribed Bivalve, Geol. Pal. Q'land and N. Guinea, &c., 1892, t. 39, f. 8.

Sp. Char.—Shell ovate-oblong; valves more or less compressed. Hinge line or cardinal margin straight, shading off posteriorly

into the posterior margin; ventral margin very gently rounded; anterior end small, its margin rounded; posterior end flattened, the margin insensibly passing into the dorsal and ventral outlines, but more obliquely into the former. Umbones anterior, but not terminal. Surface bearing concentric corrugations or rugæ, increasing in size and distance from one another posteriorly, steep on the sides, and themselves delicately concentrically striated.

Obs.—*Edmondia ? Smithii* was figured by an oversight without name or description. The nature of the hinge is not apparent, but the general outline reminds us of *Edmondia*, such forms for instance as *E. sculpta*, De Koninck,* or *E. scalariformis*, De Koninck.† The hinge line in the present specimen, however, is proportionately shorter, and the posterior ventral end more produced.

Loc.—Rockhampton District (*C. W. De Vis*, Colln. De Vis, Brisbane). Gympie Series.

Class—GASTEROPODA.

Order—PROSOBRANCHIATA.

Family—PLEUROTOMARIIDÆ.

Genus—PTYCHOMPHALINA, *Bayle*, 1885.

PTYCHOMPHALINA RANDSI, *sp. nov.*

(Pl. XLI. figs. 4 and 5.)

Sp. Char.—Shell large, turbinate-conical, of four whorls, rapidly increasing in size, so much so that the second and third are quite disproportionate. Whorls convex, the two first less so than the third and last; both the latter are deep and massive, and either flattened or slightly concave below the suture, forming a kind of shoulder; apex slightly depressed; base gently convex. Inner

* Faune Calc. Carb. Belgique, Pt. 5 (*Ann. Mus. R. Hist. Nat. Belgique*, XI), t. 11, f. 45.

† *Ibid.*, t. 11, f. 40.

lip gently receding inwards, except at quite the anterior, where it is sharp and prominent; outer lip not preserved; mouth apparently round oval. Band narrow in proportion to the size of the shell, but probably in the perfect shell prominent; sinus not preserved.

Obs.—The specimen is both at the same time an internal cast and a decorticated shell, weathering having removed every trace of sculpture, leaving only a faint indication of the band. The shelly covering remaining exhibits the weatherworn, almost eroded and cracked appearance characteristic of the Yatton fossils. The outer lip is quite imperfect, and as regards the band it is decipherable to the eye in front on the third whorl as a dark line, and to the touch as an obstructing ridge. On the body whorl, and on the third just below the suture the surface is depressed, either flattened or slightly concave.

I should have referred this shell to *Pleurotomaria rotunda*, Etheridge,* from Crocow Creek, had it not been for the following reasons:—1. In the latter the whorls appear to be wholly rounded, without any flattened surface below the suture; 2. the great relative disproportion in size between the second whorls of the two shells; 3. the more oblique inner lip in *Ptychomphalina*; 4. the more depressed outline in *P. rotunda*, and consequently different apical angle.

The present fossil by the position of the band and want of an umbilicus falls within Bayle's genus *Ptychomphalina* (*Ptychomphalus*, De Kon., non Ag.), and is akin to *P. gigas*, De Kon., in size, although it is larger.

Named in honour of Mr. W. H. Rands, Assistant Government Geologist, Queensland.

Loc. and Horizon.—Yatton Gold-field (*W. H. Rands*, Colln. Geological Survey Queensland, Brisbane). Gympie Series.

* Quart. Journ. Geol. Soc., 1872, xxviii. p. 336, t. 18, f. 3. The generic position of this fossil is somewhat doubtful. In his original description Mr. Etheridge leaves the question of an umbilicus in doubt. From the appearance of the type figure the shell appears to be non-umbilicate, but its general features and absence of any band induced me to refer it to *Platyschisma*, McCoy. In the description of Plate 15 of the Queensland Geology and Palæontology this is called *rotundata*. It should be *rotunda*.

Family—PYRAMIDELLIDÆ.

Genus—LOXONEMA, *Phillips*, 1841.

(Pal. Foss. Devon., p. 98.)

LOXONEMA, *sps.ind.*

(Pl. XXXIX. fig. 7 ; Pl. XL. fig. 6.)

Obs.—I have already recorded the occurrence of a species after the type of *L. rugifera*, *Phill.*, in the Gympie beds of the Rockhampton District. Mr. De Vis has now communicated two other species from the same strata, but unfortunately both are too insufficiently preserved to warrant the application of specific names, although they must not be passed over in silence.

The larger of the two (Fig. 6) possesses seven whorls with a total length of two inches, but the apex and body whorl are wanting. Sufficient of the sculpture remains to show that each whorl was traversed by a large number of close set, somewhat sigmoidally curved costæ, extending completely from suture to suture.

The second fossil is the impression (Fig. 7) of a comparatively small shell, similar in character to Pl. XL. fig. 6. The impression is nine-sixteenths of an inch long, and consists of thirteen whorls, similarly sculptured to Fig. 6, but with the costæ less sigmoidally curved.

Both specimens are of a type common in Devonian and Carboniferous rocks, and may be considered as appertaining to that section of the genus represented by *L. Lefevrei*, *De Kon.* The second may also be compared to *L. pulcherrima*, *McCoy.* The larger of the two specimens (Pl. xl. fig. 6) is also closely related to a shell I described* some years ago as *L. sulculosa*, *Phill.*, from near Lake Bathurst, N.S. Wales, but in the case of the latter the sigmoidal rugæ are much coarser and less numerous. The shell

* Journ. R. Soc. N.S. Wales for 1880 [1881], xiv. p. 251, Pl. f. 1.

just named I now find comes from a much lower horizon than I thought in 1880, and is probably from one of our Siluro-Devonian Limestones, although I then doubtfully referred it to the Carboniferous. This fact, however, tends to point out the persistence of the type.

Loc. and Horizon.—Rockhampton District (*C. W. De Vis*, Colln. De Vis). Gympie Series.

Family—BELLEROPHONTIDÆ.

Genus—BELLEROPHON, *De Montfort*, 1808.

(*Conch. Systématique*, 1. p. 51.)

BELLEROPHON, *sp.ind.*

(Pl. XXXIX. fig. 8.)

Obs.—A small and well marked form occurs in limestone, but unfortunately only the back is visible. A raised, square-edged keel exists, bearing traces of recurved striæ. The back and sides are crossed by sharp, straight, transverse ribs, with here and there a few faint intervening striæ. Apparently the umbilicus was overlapped by an alar expansion. The characters of this specimen indicate the group of *B. tangentialis*, Phill., as its resting place, particularly the subimbricating costæ at right angles to the keel. A resemblance is also borne to *B. stanvelliensis*, mihi,* more particularly from traces on one side of an alar expansion of the inner lip.

Loc. and Horizon.—Rockhampton District (*C. W. de Vis*, Colln. de Vis). Gympie Series (in limestone).

* *Geol. Pal. Queensland, &c*, 1892, t. 15, f. 11-13.

EXPLANATION OF PLATES XXXIX—XLI.

PLATE XXXIX.

ACTINOCYSTIS ? TERRA-REGINÆ, *Eth. fil.*

Fig. 1.—Portion of the corallum, the upper surface cut rather obliquely.

Fig. 2.—The upper surface enlarged twice.

GRIFFITHIDES SWEETI, *Eth. fil.*

Fig. 3.—Portion of the cephalon with the thorax and pygidium— $\times 2$.

ATHYRIS ROYSII, *Lereillé, sp.*

Fig. 4.—Impression of a valve, with its concentric laminæ and spinose frills.

CYPRICARDELLA RECTANGULARIS, *Eth. fil.*

Fig. 5.—The two valves displaced.— $\times 2$.

EDMONDIA ? SMITHII, *Eth. fil.*

Fig. 6.—Right valve rather compressed, and the umbone hidden.— $\times 2$.

LOXONEMA, *sp. ind.*

Fig. 7.—Cast taken from an impression.— $\times 2$.

BELLEROPHON, *sp. ind.*

Fig. 8.—Back of shell exhibiting the raised keel, and nearly straight transverse ribs.— $\times 2$.

PLATE XL.

NOEGGERATHIOPSIS ? *sp. ind.*

Fig. 1.—Spathulate, triangular frond, with attenuated curved base.

CAMPOPHYLLUM GREGORII, *Eth. fil.*

Fig. 2.—Slightly imperfect corallum, seen partly in weathered and partly in polished section.— $\times 1\frac{1}{2}$.

CYATHOPHYLLUM SWEETI, *Eth. fil.*

Fig. 3.—Exterior of an ill-preserved corallum with the remains of rugæ.

Fig. 4.—Transverse section of the corallum.

CHÆNOMYA ? ETHERIDGEI, *De Kon.*, *sp.*

Fig. 5.—Left valve with the umbo removed.

LOXONEMA, *sp. ind.*

Fig. 6.—Specimen seen partly as an internal cast, and in part with remains of the sculpture.

PLATE XLI.

CYATHOPHYLLUM SWEETI, *Eth. fil.*

Fig. 1.—Four septa, and interseptal loculi enlarged showing the angular and sometimes irregular dissepiments.— $\times 6$.

RHIZOPHYLLUM ? *sp. ind.*

Fig. 2.—Corallum showing the form of the calice.

Fig. 3.—Opposite side of the corallum, with the imbricating laminæ, and truncated base.

PTYCHOMPHALINA RANDSI, *Eth. fil.*

Fig. 4.—Imperfect shell with obscure traces of the band on the body whorl.

Fig. 5.—The non-umbilicate base.



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