

XVII.—*Characters of seventeen new forms of the Cyclostomacea from the British Provinces of Burmah, collected by W. Theobald, jun., Esq. By W. H. BENSON, Esq.*

1. *Alycæus pyramidalis*, n. s.

Testa perforata, pyramidato-conica, læviuscula, confertim oblique arcuato-striatula, albido-carnea, apicem versus rubella; spira pyramidata, sutura valde impressa, apice obtusiusculo; anfractibus $5\frac{1}{2}$ valde convexis, ultimo postice inflato, tum constricto, deinde sub-tumido, aperturam versus latiori, tubulo calloso, elongato, retro-verso, suturali, pone constrictionem oriente, munito; apertura obliqua, subcirculari; peristomate duplici, interno continuo, expansiusculo, externo expanso, reflexiusculo, anfractu penultimo brevissime angulatim adnato, superne antice sinuato, tum arcuato, ad umbilicum leviter emarginato. Operculo —?

Long. 12, axis 10, lat. 10 mill.

Hab. raro ad collem Therabuin, vallis Tenasserim.

Nearly related to the Cochin-Chinese *Alycæus gibbus*, Fér., but easily to be distinguished by its more pyramidal growth, and by the greater length of the spire in proportion to the breadth of the last whorl, its more symmetrical proportions, sculpture, &c. The origin of the sutural tube is about 4 millimeters from the anterior margin of the aperture. This shell was met with at no other place in the district, and seemed restricted to a spot of a few acres in circumference. The hill is of limestone, steeply scarped and almost inaccessible. Three species of *Helix* occurred there which were similarly deficient elsewhere.

2. *Alycæus umbonalis*, n. s.

Testa late umbilicata, depressa, subdiscoidea, confertim acute arcuatim costulata, cinereo-albida, apicem versus obtusulum, rubellum vel nigrum, rubescente; spira brevi, sutura profunda; anfractibus $4\frac{1}{2}$ convexis, ultimo ad latus, spiraliter rugoso-cancellatum, inflato, tum constricto, deinde tumidiusculo, tubulum retroversum, elongatum suturalem pone constrictionem gerente; apertura valde obliqua, circulari, undata, peristomate duplici, interiori continuo, expanso, nitidissimo, prope umbilicum sinuato, exteriori expanso, incrassato, ad anfractum penultimum breviter interrupto; umbilico perspectivo. Operculo corneo-fusco, multispirato, anfractuum marginibus scabre elevatis, extus profunde concavo, intus convexiusculo, nitidissimo, sulco marginato, umbone centrali papillari munito.

Diam. major 10, minor 8, axis 5 mill.

Hab. ad Akaouktong, prope ripas fluvii Irawadi, nec raro.

As the last-mentioned species exhibited a Cochin-Chinese form, so does this shell represent, on a larger scale, the little Western Himalayan species *A. strangulatus*, Hutton. The *Ann. & Mag. N. Hist. Ser. 2. Vol. xvii.* 15

brous cancellation of the inflated part *only* of the last whorl is an unusual feature, no trace of the spiral rugæ appearing elsewhere on the whorls.

The origin of the sutural tube is about 4 millimeters from the aperture. The shell has much affinity with the Bornean *Alycæus Spiracellum*, A. & R., which has a somewhat similar operculum. Dr. Pfeiffer informs me that it is an *Alycæus*, and not a *Pterocyclos*, as conjectured by him before he had an opportunity of inspecting the shell.

3. *Alycæus Amphora*, n. s.

Testa anguste umbilicata, ovato-globosa, exilissime costulato-striata, albido-carnea, versus apicem acutiusculum rubella; spira conica, sutura subprofunda; anfractibus 4 convexis, ultimo inflato, juxta aperturam constricto, tubulo suturali longissimo prope peristoma oriente; apertura verticali; peristomate duplici, continuo, interiori breviter porrecto, intus pallide aurantiaco, exteriori expanso, striatulo, incrassato; umbilico intus spiraliter striato, margine compressiusculo. Operculo —?

Long. $5\frac{1}{2}$, diam. obliq. 5 mill.

Hab. ad Moulmein, et in valle Tenasserim raro.

The shell occurs also of a smaller size. It approaches in form the Sikkim *A. Urnula*, nobis, but has a more globose aspect. The extreme length of the sutural tube is remarkable; it extends so far round the last whorl as to be visible from the front on both sides of the shell. The aperture occupies about half the height of the specimen.

4. *Alycæus sculptilis*, n. s.

Testa late umbilicata, turbinata, subtrochiformi, acute costulata; spira conica, sutura profunda, apice attenuato, acutiusculo; anfractibus 5 convexis, ultimo ad latus inflato eo costulis confertissimis munito, tum constricto, antice læviori, tumido, tubulo suturali mediocri, ab apertura remoto, incumbente, circa umbilicum obtuse angulato, intus concaviusculo; apertura obliqua, circulari; peristomate duplici, interiori subporrecto, incrassato, margine superne profunde inciso, interiori dextrali interne crenulato vel denticulato, externo incrassato, expanso, reflexiusculo, superne incrassato prominente, ab anfractu penultimo sinu profundo separato. Operculo —?

Diam. $3\frac{1}{2}$, axis $2\frac{1}{4}$ mill.

Hab. raro ad Thyet-Mio prope fluvium Irawadi, non procul a finibus provinciæ Burmanicæ Britannicæ.

The specimen is much weathered, and has lost all its colour, so that I am unable to describe that part of its character. It presents a new form in the genus, and exhibits peculiar characters in the slit inside the aperture at its upper part, and in

the crenulation or denticulation along the callous interior of the right lip. The teeth are twelve in number, and are disposed in pairs. The incision resembles that observable in some of the species of *Pterocyclos*, and there is a slight disposition towards the formation of a wing.

5. *Alycæus armillatus*, n. s.

Testa umbilicata, depresso-turbinata, costulata; spira conoidea, sutura impressa, apice obtuso; anfractibus $3\frac{1}{2}$ convexis, ultimo ad latus inflato, confertius costulato, tum constricto, antice tumido, læviori, tubulo suturali brevi, ab apertura remoto, munito; apertura obliqua circulari, peristomate duplici, interno valde porrecto, continuo, margine simplici, extus striato, exteriori expanso, reflexiusculo; umbilico subaperto. Operculo —?

Diam. major 2, minor $1\frac{3}{4}$, axis $1\frac{1}{4}$ mill.

Hab. ad Thyet-Mio cum præcedente.

The exterior expanded peristome, forming a conspicuous collar round the porrect interior portion, is the most prominent character in this very minute species. The only specimen received is in a weathered condition, and so much bleached that the colour of the perfect shell cannot be ascertained.

Five new forms have here been added to this curious restricted genus, which now contains nine species, three of which are Himalayan, one Cochinchinese, and one (*A. Spiracellum*, A. & R.) from Borneo. The Ultra-Gangetic region must at present be considered the head-quarters of the type.

6. *Pterocyclos pullatus*, n. s.

Testa aperte umbilicata, convexo-depressa, confertim radiato-striatula, nigrescente-castanea, superne strigis luteo-albidis, fulguratis, fasciaque saturata ornata; spira convexa, sutura profunda, apice prominulo; anfractibus $4\frac{1}{2}$ convexis, ultimo longe descendente, subtus convexo; apertura vix obliqua, circulari; peristomate duplici, interiori breviter porrecto, superne sinu mediocri latiusculo, interrupto, exteriori vix expansiusculo, superne alam subrevolutam semicucullatam, antice breviter descendente obtusam, ab anfractu penultimo distantem efformante; umbilico mediocri, profundo, perspectivo. Operculo intus concavo, extus concaviusculo, scabro; anfractuum marginibus elevatis; margine laterali lato, lamellis acutis spiralibus munito.

Diam. major 13, minor $11\frac{1}{2}$, axis 6 mill.

Hab. ad Akaouktong, prope fluvium Irawadi, satis frequens.

The less depth of the interior hollow of the operculum and the structure of the wing show a departure from the typical species of *Pterocyclos*, which becomes more apparent in the southern form next to be described.

7. *Pterocyclos Cetra*, n. s.

Testa late umbilicata, orbiculato-depressa, capillaceo-striatula, luteo-cornea, strigis radiatis, subremotis, irregularibus, ornata; spira planata, sutura impressa, apice vix prominulo; anfractibus 5 convexiusculis angustis, ultimo breviter descendente; apertura obliqua, circulari, peristomate duplici, interiori continuo, breviter porrecto, superne breviter emarginato, exteriori expanso, incrassato, superne lingua obtusa vix descendente, sinu profundo ab anfractu penultimo separata, munito; umbilico lato, non profundo, omnes anfractus exhibente, margine subangulato. Operculo —?

Diam. major 13, minor 10, axis 4 mill.

Hab. ad Moulmein, et in valle Tenasserim satis frequens.

8. *Cyclophorus*? *scissimargo*, n. s.

Testa umbilicata, globoso-turbinata, sub epidermide cornea albida, strigis distantibus angulatis picta, radiato-striata, striis exilissimis et lineis elevatis remotis spiralibus, his quidem ciliatis, cancellata; spira conica, sutura profunda, apice obtusiusculo, nigrescente; anfractibus 5 convexis; apertura obliqua, subcirculari, superne leviter angulari, peristomate duplici, exteriori et interiori acutis, sulco separatis, margine columellari emarginato, parietali adnato, superne breviter anguste inciso; umbilico profundo, anguste perspectivo. Operculo —?

Diam. major 7, minor $5\frac{1}{2}$, alt. 7 mill.

Hab. ad Phie Than vallis Tenasserim, raro occursens.

This little species, which has some affinity to *C. triliratus*, Pfr., is singular on account of the incision which appears in the parietal margin near its junction with the right lip, a feature not observed in any other species of the Cyclostomacea. It is with some hesitation therefore that, in the absence of an operculum, I refer it to *Cyclophorus*, although the general habit of the shell bears out the location.

9. *Cyclophorus Calyx*, n. s. *Panciculus 1954*

Testa late umbilicata, orbiculato-depressa, radiato-striatula, albida, strigis castaneis radiatis superne picta; spira planata, sutura impressa, apice vix prominulo; anfractibus $4\frac{1}{2}$ convexiusculis, ultimo compresso, subtus, circa umbilicum minime profundum, latum, angulato; apertura obliqua, circulari, peristomate duplici, continuo, breviter adnato, externo incrassato, superne expanso, angulato. Operculo —?

Diam. major 10, minor 8, axis 3 mill.

Hab. ad Akaouktong, prope ripas fluminis Irawadi.

The flattened depressed form of this shell, and the angular expansion of the outer peristome at the top of the aperture,

render it easy of recognition among the depressed and widely umbilicate forms of *Cyclophorus*.

10. *Leptopoma aspirans*, n. s.

Testa perforata, globoso-conica, acuminata, tenui, translucente, oblique et spiraliter exilissime striata, lineis elevatis 6 spiralibus, æquidistantibus, superne munita, albido-cornea, fasciis fuscis vel strigis angulatis castaneis ornata; spira acuminato-conica, sutura impressa, apice acutiusculo; anfractibus $5\frac{1}{2}$ convexis, ultimo ad periphæriam carinato, subtus læviori; apertura obliqua, subcirculari, peristomate tenui, horizontaliter breviter patente, marginibus callo tenui junctis, columellari leviter emarginato. Operculo ut in genere.

Diam. major 11, minor 9, alt. 12 mill., apert. $6\frac{1}{2}$ mill. longa.

Hab. in valle Tenasserim.

In form it most nearly approaches *L. vitreum*, Qu., but has a more acuminate spire. Its sculpture has greater resemblance to that of the more globose and depressed Bornean species, *L. sericatum*, Pfr. The smaller specimens have a more conical and trochiform appearance than the larger ones.

11. *Megalomastoma gravidum*, n. s.

Testa perforata, pupiformi, distorta, solida, læviuscula, vix striatula, fusco-albida; spira distorto-ovata, sutura marginata, apice conoideo-obtusum; anfractibus 6 convexis, penultimo elongato supra aperturam planato, dorso gibbo, ultimo angustiori, antice subito ascendente; apertura leviter sursum spectante, circulari, fauce fusca, peristomate albido, incrassato, superne angulato, expansiusculo, reflexiusculo, intus late sulcato, tum calloso-marginato, callo interiori dextrorsum superne angulato-sinuato, sutura canalis obsoleti ad angulum anticum raro apparente.

Long. 35 mill., diam. anfr. penult. 20 mill.

Hab. ad Moulmein.

In the obsolete channel, occasionally visible at the top of the aperture, this shell has possibly some relation to Gould's *M. sectilabre*. The indentation, invariably present in the internal callus of the aperture, seems to have some reference to the obliterated channel, and shows a passage to the *Pupinæ*. The form has a great resemblance to that of the gigantic *P. grandis*, Forbes (*Forbesi*, Pfr.), which it exceeds in size. As in that shell, the great length of the penultimate whorl, above the aperture, contrasts with the shortness of the same part in the allied species *M. Chrysallis*, Pfr., which does not appear in the collection.

The specimens received are weathered, and may possibly, in a perfect state, exhibit an epidermis and more colour. The operculum is, unfortunately, not forthcoming.

12. *Pupina Arula*, n. s.

Testa imperforata, conoideo-ovata, longitudinaliter striatula, nitidissima, fusco-rubella, apice conoideo, acuto, sutura calloso-marginata; anfractibus 6, ultimo spiram subæquante, antice breviter ascendente; apertura circulari, angulo superiori acuto adjecto, callo parietali superne lamella intrante munito; columella profunde incisa, canalem extus apparentem, lingua lata parietali obtectum, callisque duobus divergentibus marginatum, exhibente; peristomate obtuso, expansiusculo, extus marginato, margine dextro supra medium arcuato; basi foveata. Operculo — ?

Long. 9, diam. 5 mill.

Hab. ad Yunglaw, in valle Tenasserim, raro occurrens.

It has much affinity with *P. aurea*, Hinds, the superior canal being rather simulated than actually developed, and being formed by an angle, at the top of the otherwise circular aperture, cut off from the lower portion, in part, by the parietal lamina.

13. *Pupina artata*, n. s.

Testa imperforata, pupiformi, ovato-acuminata, politissima, fusco-cornea, translucens, vel hyalina; spira ovato-conoidea, apice obtusiusculo, sutura callosa, lineari; anfractibus $5\frac{1}{2}$ convexiusculis, ultimo $\frac{1}{3}$ testæ partem superante; apertura verticali, circulari, bicanaliculata; peristomate obtusiusculo, margine parietali superne linguam acutam, callo verticali elongato, cum margine dextro subparallelo, marginatum, exhibente, infra cum basali canalem incisum, ascendentem, extus calloso-marginatum, efformante. Operculo testaceo pauci-spirali, concaviusculo, sutura elevata.

Long. 6, diam. $3\frac{1}{2}$ mill.

Hab. ad Moulmein satis frequens.

It has some affinity with the Australian species of the genus.

Although the following shell is not Burmese, yet as it is found in the Ultra-Gangetic portions of the Bengal Provinces, which are geographically a continuation of the same zoological tract, I shall give it a place here.

14. *Pupina imbricifera*, n. s.

Testa imperforata, ventricose ovato-acuta, politissima, fuscescente, pellucida; spira conica, apice acutiusculo, sutura leviter impressa; anfractibus $6\frac{1}{2}$ convexiusculis, ultimo spiram æquante, ventricosiori, antice subascendente; apertura circulari, bicanaliculata, peristomate pallide carneo, duplici, interno obtuso, breviter porrecto, externo expanso, subreflexo, superne longe ascendente, margine parietali calloso linguam acutam, cum margine dextro conniventem, et callum verticalem, validum, elongatum, arcuatim divergentem, cum processu labri exterioris canalem efformantem,

exhibente, subtus cum basali exteriori canalem incisum, marginibus extus callosis, ascendentem, construente. Operculo — ?
 Long. 10, diam. anfract. penult. 5 mill.
Hab. in provincia Bengalensi orientali Sylhet.

This handsome species is singular on account of the great development of the callus, which runs up the penultimate whorl two-thirds of its height, forming, with the prolongation of the outer lip, a channel leading to the incision at the top of the aperture.

No species of *Pupina* has hitherto been described as inhabiting the mainland of either Cis- or Ultra-Gangetic India, although Sowerby has assigned a species to the island of Singapore, situated at the extremity of the Malayan Peninsula; these three species are therefore an interesting addition to the genus in a geographical point of view, the last one especially, on account of its occurrence so far to the northward.

15. *Otopoma Blennus*, n. s.

Testa anguste et profunde umbilicata, conoideo-globosa, crassiuscula, leviter striatula, sordide albida; spira conoidea, sutura submarginata, apice acutiusculo; anfractibus 5 convexiusculis, ultimo ventricosiore; apertura obliqua, ovali, superne angulata; peristomate recto obtuso, marginibus callo brevi, tenui, junctis, columellari leviter revoluti, expanso. Operculo — ?
 Diam. major 18, minor 15, alt. $18\frac{1}{2}$, axis $13\frac{1}{2}$ mill. Apert. $10\frac{1}{2}$ mill. longa.
Hab. raro ad Moulmein.

This species is in a worn condition, and in a fresh state may exhibit more colour. In form it is less depressed in proportion to the diameter than *O. clathratulum*, from which it differs otherwise in sculpture.

16. *Hydrocena Illex*, n. s.

Testa vix perforata, ovato-acuta, minutissime striata, spiraliter confertim tenuisulcata, succinea, translucida, versus spiram rubellousca; spira nitida, elongato-conica, sutura profunda, apice obtusiusculo; anfractibus 4 valde convexis, ultimo $\frac{1}{3}$ totius testæ superante; apertura obliqua, ovata, superne angulata, peristomate tenui, non continuo, marginibus conniventibus, dextro recto, acuto, columellari reflexiusculo. Operculo tenui, corneo, pellucido, paucispirato, nucleo basali.
 Long. $2\frac{2}{3}$, diam. $1\frac{2}{3}$ mill.
Hab. ad Phie Than, vallis Tenasserim, satis frequens, saxi calcareis adhærens.

Nearly allied to *Hydrocena (Cyclostoma) sarrita*, nobis, *Annals*, vol. viii. N.S. p. 188, but more slender in form. The

presence of an operculum in this species enables me to fix the proper place of its ally, which inhabits a deep valley near Cherra, in the Khassya Hills.

17. *Hydrocena Pyxis*, n. s.

Testa obtecte perforata, ovato-conica, spiraliter sulcata, succinea, translucente, spiram versus rubente; spira conica, sutura profunda, apice obtuso; anfractibus 4 convexis, ultimo $\frac{2}{5}$ totius testæ æquante; apertura obliqua, semicirculari, peristomate tenui, acuto, non continuo, margine columellari expanso, reflexiusculo. Operculo —? Long. $1\frac{1}{2}$, diam. $1\frac{1}{4}$ mill.

Hab. ad Thyet-Mio.

This species inhabits the northern frontier of the province of Pegu, that previously described representing the genus *Hydrocena* of Pfeiffer in the southern provinces. The careful examination of masses of byssus and tree mosses, in which my Cherra species, *sarrita*, *tersa*, and *Milium*, were detected, will probably reveal other Burmese forms. *H. Pyxis*, although smaller than *H. Illex*, is more coarsely sulcate, and the furrows on the lower whorl are more distant near the suture than below.

The large variety of *Cyclophorus pernobilis* figured by Gould, 65 millimeters in the greater diameter, was found sparingly by Mr. Theobald in the Tenasserim valley, associated with a smaller shell having a more angular periphery, considered by him to be merely a variety, and, in the decorticate state in which it has been sent, bearing a considerable resemblance to Pfeiffer's *C. alabastrinus*, a shell assigned to Ceylon. The figures 4 & 5. pl. 23. of the new edition of Chemnitz give a very imperfect idea of the beautiful colouring of the large shell, or of its bright orange peristome. I much doubt the propriety of Pfeiffer's reference of this shell to Schumacher's *C. aurantiacus*. A dubious shell, from Thyet-Mio, with closely-set flexuous spiral striæ, has much greater pretensions to be considered as that species.

C. expansus, Pfr., was not uncommon in the Tenasserim valley.

C. fulguratus, Pfr., was found, of various sizes, from Thyet-Mio to Rangoon, where the species has the following dimensions:—

Diam. major 39, minor 32, axis 26 mill.

The colour of the shining orange peristome is very rich. The operculum is thin and horny, the outer volutions being separated by a raised edge, and the inner ones ill-defined.

Megalomastoma sectilabre, Gould, is not among the shells received, a circumstance the more to be regretted, as my Bornean species, *M. Anostoma*, has been mistaken for it on the continent, but fails to answer the peculiar character assigned to it by Gould and Mason, viz. the occurrence of a fissure across the

peristome at the opposite side from that on which it is observable in *M. altum*, Sow. Dr. Pfeiffer's supposed specimen of *M. sectilabre* is from Borneo, and is, unquestionably, *M. Anostoma*, showing a trace of the channel on the inside of the columellar lip, and none on the opposite side.

Pfeiffer's *Leptopoma Burmanum*, collected by Dr. Theodore Philippi at Mergui, is not to be recognized in the collection. A bleached and worn shell, without an operculum, and intermediate in size between that shell and *Cyclophorus expansus*, is marked from Phie Than, and is probably only a variety of the species last named, with a more acute keel and a less expanded peristome. *L. Burmanum* was described from an immature specimen, and will probably present a different aspect from the figure given in Chemnitz when found in its full development.

Cheltenham, 25th January, 1856.

Since the conclusion of the above paper, I have received, among some shells collected in the Burmese territory by Mr. Oldham, a third species of *Hydrocena*, intermediate between *H. sarrita* and *H. Illex*, but larger than either. It was found at the Myaleit Hill, near Ava, during the stay of the late embassy at that capital.

XVIII.—*Descriptions of three newly discovered species of Araneidea.* By JOHN BLACKWALL, F.L.S.

Tribe Octonoculina.

Family LINYPHIIDÆ.

Genus NERIËNE, Blackw.

Neriëne cornigera.

Length of the male $\frac{1}{12}$ th of an inch; length of the cephalo-thorax $\frac{1}{24}$; breadth $\frac{1}{28}$; breadth of the abdomen $\frac{1}{8}$; length of an anterior leg $\frac{1}{8}$; length of a leg of the third pair $\frac{1}{10}$.

The cephalo-thorax is oval, convex, glossy, slightly elevated before, where the eyes are situated, and has an indentation in the medial line: the falces are conical, divergent at the extremity, armed with teeth on the inner surface, and somewhat inclined towards the sternum, which is broad, convex, glossy, and heart-shaped: the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex: the legs are slender and slightly hairy; the first and fourth pairs are the longest and equal in length, and the third pair is the shortest;



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