

posed to be deficient. I communicated my suspicion to Dr. Günther, who had the kindness to examine the conditions more closely, by clearing away the soft parts, and confirmed my conjecture. As regards the toothlessness of the palate, therefore, there is no difference between these two genera.

XXXVI.—*Remarks on several Species of Bullidæ, with Descriptions of some hitherto undescribed Forms, and of a new Species of Planaxis.* By EDGAR A. SMITH, Zoological Department, British Museum.

IN comparing the specimens belonging to the family Bullidæ contained in the collection of the British Museum with the monograph by A. Adams in the 'Thesaurus Conchyliorum,' vol. ii., and with the monographs by Sowerby of various genera included in this family in the 'Conchologia Iconica,' vols. xvi. & xvii., I have met with some errors, chiefly in the latter work, some of which I am enabled to correct, since the typical specimens of many of the species described in these publications are in the Cumingian collection, now in the British Museum.

*Atys ferruginosa.*

Adams (Thes. Conch. ii. p. 585, pl. 124. f. 110) describes and figures a shell from Cuming's collection, which he considers the same as that figured by Martini, Conch.-Cab. i. pl. 22. f. 209, 210, and assigns to it the name *A. ferruginosa* of Chemnitz, which should be of Gmelin, Syst. Nat. p. 3432.

This is certainly an error; for, as Dillwyn (Cat. Rec. Shells, i. p. 477) has long ago intimated, the figure of Martini is doubtless that of an immature *Cypræa*.

On careful examination of Adams's type, which only differs from *A. naucum* in possessing longitudinal irregular brown stripes, it proves to be but a small example of that species, which has retained the epidermis, the whole of which might be removed, and with it the markings, for they are only epidermal.

*Atys cylindrica.*

*Bulla cylindrica*, Helblings, Chemn. Conch.-Cab. x. pl. 146. f. 1356-7.

= *Bulla solida*, Brug. Enc. Méth. pl. 360. f. 2.

= *Atys elongata*, A. Ad. Thes. Conch. ii. p. 587, pl. 125. f. 121.

These three forms are figured by Adams in the last-named work. The latter two must be considered varieties of *cylindrica*, and, as their names imply, are respectively, the one more solid and somewhat shorter than it, and the other more



elongate and a trifle less solid. This conclusion is arrived at after a careful study of a good series of specimens, among which the connecting links are found. Sowerby (Conch. Icon. xvii. sp. 4) says, in reference to *solida*, "it may possibly be a dwarf variety" of *cylindrica*.

*Atys ovoidea*, Quoy & Gaimard, *vide* A. Ad. Thes. Conch. ii. p. 585, pl. 124. fig. 111; and Sowerby, Conch. Ic. pl. i. f. 3.

The shell figured in the above works is not the *Bulla ovoidea* of Quoy and Gaim. Voy. Astrol. pl. 26. f. 18, 19.

These authors describe it as a fragile species, "très-légèrement striée en long avec d'autres stries transverses et peu nombreuses *en avant seulement*." These characters, together with the figures, at once separate it from the species referred to it by Adams, which is the *Atys obovata*, Menke, Malak. Blätter, 1854, p. 46. Sowerby, in the remark on this shell (sp. 3), says it "may only be a dwarf variety of *Atys naucum*," in which opinion I concur.

*Atys muscaria*, Guilding; Sow. Conch. Icon. xvii. sp. 5.

For *Guilding* substitute *Gould*, Proc. Boston Soc. Nat. Hist. vii. p. 138.

*Atys semistriata*, Gould; Sow. *l. c.* sp. 27.

*Hab.* North America.

Substitute *Pease*, Proc. Zool. Soc. 1860, p. 20, for *Gould*; and the above locality change to Sandwich Islands.

*Atys debilis*, Pease.

Add:—Proc. Zool. Soc. 1860, p. 20.

*Hab.* Sandwich Islands.

*Atys porcellana*, Guilding; Sow. *l. c.* sp. 30.

*Hab.* Kagosima, Western States.

For *Guilding* substitute *Gould*, Proc. Boston Soc. Nat. Hist. vol. vii. p. 138.

Alter habitat to Kagosima, Nippon, Japan.

The specimen from which Mr. Sowerby figured this species is fixed to a tablet, on which the name and locality are written thus:—" *Atys porcellana*, Gld. Kagosima, W.S.," *Gld.* being the contraction of *Gould*, and *W. S.* the initials of William Stimpson, who collected the shells, and not signifying Western States. I give this explanation to show that the error does not exist in the Museum collection.



*Atys canariensis.*

*A. testa* ovata, alba, pellucida, incrementi lineis irregulariter, et transversim medio leviter, superius inferiusque profundius striata; vertex aliquanto depressus; apertura superius mediocre angusta, super verticem paululum producta, basim versus sensim dilatata; labium tenue ad verticis medium (quo jungitur) incrassatum; columella arcuata parum reflexa; umbilici regio distincte perforata.

Long. 7 mill., diam.  $4\frac{1}{3}$ .

*Hab.* Teneriffe, Canary Islands.

Of the form of the young state of *A. naucum*; but the striæ are less distinct and not so far apart; also very like *caribæa*, D'Orb., but rather broader.

*Atys M'Andrewii.*

B.M.

*A. testa* elongato-ovata, superius truncata, pellucida, fasciis angustis numerosis lacteis et medio una latiore cincta, transversim superne basique distanter striata; interstitium læve; vertex excavatus, margine aliquanto acuto circumdatus; apertura angusta, super verticem parum producta, basi sensim paululum dilatata et effusa; labrum tenue verticis medio junctum et ibi sinuatum; columella brevis, incrassata, haud torta; umbilici regio leviter perforata.

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

*Hab.* Lancerote.

I feel much pleasure in dedicating this species to Mr. R. M'Andrew, by whom it was dredged at the above locality and most liberally presented to the British Museum, together with a complete series of all the various species of Mollusca he there collected.

It is at once recognized by the numerous lacteous bands upon a pellucid ground.

*Atys angustata.*

B.M.

*A. testa* parva, alba, semipellucida, nitida, elongato-ovata, superius basique aliquanto attenuata et fortiter striata, medio lævi; apertura angusta, basim versus vix dilatata; labrum tenue, verticis medio junctum et ibi valde incrassatum et sinuatum; columella curta, recta, leviter reflexa.

Long. 5 mill., diam.  $2\frac{2}{3}$ .

*Hab.* Gulf of Suez (*R. M'Andrew*), dredged.

A very narrow species, attenuated at each end and obscurely angulated in the middle; the labrum is very thick at its junction with the middle of the vertex, and strongly sinuated; the superior and inferior striæ are each about twelve in number.



*Atys miranda*.

B.M.

*A. testa* elongato-ovata, pellucida, transversim tenuiter et incrementi lineis irregulariter striata; vertex depressus, medio (ex quo surgit labrum) perforatus; apertura superius angustissima super verticem parum producta, basim versus sensim dilatata et effusa; columella brevissima, arcuata, subito (ut in genere *Achatina*) truncata.

Long. 10 mill., diam. 4.

*Hab.* Gulf of Suez. Dredged by Mr. R. M'Andrew.

It is questionable whether the peculiar truncation of the columella, which is very like that of the genus *Achatina*, is not of subgeneric character; but as there is but a single specimen at hand, it is advisable to wait until there are more to judge from.

*Haminea oryza*, Gould; Sowerby, Conch. Icon. xvi. sp. 1.

Substitute for *Gould, Totten, Silliman's Journal*, xxvii. p. 350, f. 5.

This is already noticed by Tryon, Amer. Journ. Conch. iv. p. 283.

*Haminea natalensis*, Sowerby, *l. c.* sp. 7.

This is not *H. natalensis* of Krauss, Südafr. Mollusk. p. 71, pl. iv. fig. 14. On comparing it with the types of *H. peruviana*, D'Orb., in D'Orbigny's collection, they prove to be almost identical. This species, not mentioned by Sowerby in his monograph, is described in the 'Voyage dans l'Amérique méridionale.'

*Haminea rotunda*, A. Ad.; Sowerby, *l. c.* sp. 9.

= *Haminea rotundata*, A. Ad. Thes. Conch. ii. p. 583, pl. 124. f. 5.

*Haminea pemphix*, Phil.; Sow. *l. c.* sp. 12.

= *Haminea pemphis*, Phil. Zeitschrift f. Mal. 1847, p. 122.

Adams (in Thes. Conch. ii. p. 580) places "*zelandiæ*, Gray, MS. Brit. Mus." as a synonym. This name is not a manuscript one. It was published in 1843 in Dieffenbach's 'New Zealand,' p. 243; and thus it would have precedence over *pemphis*, Phil., should they prove to be identical; but, from the descriptions and localities, I consider them distinct. However, it is certain, on comparing the specimens referred to *pemphis* by Adams and Sowerby with the type specimens of *H. zelandiæ* presented to the British Museum by Dr. Dieffenbach, that these are the same species. In the Museum there are two specimens from the Red Sea (the locality cited by Philippi) which are identical with the types of *H. tenella*, A.



Ad. Thes. Conch. ii. p. 583, pl. 124. f. 104, of doubtful locality; and although considerably like *zelandiæ*, they are nevertheless a little narrower, with the columella not so arcuate, and "e rufescente alba, lineolis transversis exilissimis sculpta" (*Philippi*), thus differing from *zelandiæ*, which is irregularly scratched across, and of a white colour under a light-brown epidermis.

Sowerby (*l. c.* sp. 13) has given a good figure of a full-sized *zelandiæ* under the name of *obesa*, Sow., not being aware that it had already been described by Dr. Gray.

*Haminea constricta*, A. Ad. MS.; Sowerby, *l. c.* sp. 16.

This is not a manuscript name, it being published in the Thes. Conch. ii. p. 581, pl. 124. f. 95.

*Haminea ferruginea*, Chemn.; Sowerby, *l. c.* sp. 30.

Sowerby, in his monograph of the genus *Atys* (Conch. Ic. xvii. sp. 2) figures a species of this genus which he calls "*A. ferruginosa*, Chemnitz, Hist. Conch. i. tab. 22. f. 209, 210." See previous remarks on this.

Again, he cites the same two figures as representing a species of another genus, *Haminea ferruginea*, Chemn., thus referring two distinct genera to the same figure, which is absurd, and only shows the hurry in which the monograph in question appears to have been prepared, and also the little amount of care bestowed upon it.

The shell figured *l. c.* f. 30 is *H. fusca*, A. Ad., Thes. Conch. ii. p. 581, pl. 124. f. 94, from Cagayan, Island of Mindanao, Philippines.

*Haminea angustata*, Gould, MS.; Sowerby, *l. c.* sp. 32.

This should be *angusta*, Gould, Proc. Bost. Soc. Nat. Hist. vii. p. 139.

*Hab.* "Simonda, Western States of North America" (*Sow.*). This should be Simoda, Nippon, Japan.

This is another instance of the general want of care which characterizes many of the monographs published in this work.

The shell Mr. Sowerby took his description and figure from is in the Cumingian collection, and is placed on a tablet with the name and locality thus written:—" *Haminea angusta*, Gld. Simoda, W. St." The W. St. signifies William Stimpson, the collector of the specimens, and not Western States of North America. It is necessary to give this explanation, lest it might be thought that the error really occurred in the Museum collection.



*Haminea novæ eboraci*, Sowerby, *l. c.* sp. 6.

Corrected, in the index, *novi eboraci*. Tryon, in the American Journ. Conch. vol. iv. says:—"This is surely the *Bulla insculpta* of Totten; and the species figured by Sowerby as *insculpta* is the *solitaria* of Say, if, indeed, the two are really distinct." I may add that Sowerby's figures 1 *a* & 1 *b*, taken from Cumingian specimens, are magnified, being half as long again as the actual shells. Fig. 6 (*novi eboraci*) is of the natural size. The only observable difference in the two forms is that of size.

*Haminea galba*, Pease.

Add:—Proc. Zool. Soc. 1860, p. 432.

*Hab.* Sandwich Islands.

*Haminea crocata*, Pease.

Add:—*l. c.* p. 432, not 19.

*Hab.* Sandwich Islands.

*Haminea glabra*, A. Ad.

Add:—*Hab.* West Indies.

*Haminea serica*.

B.M.

*H.* testa rotunde ovata, tenuissima, pellucida, albida, vix nitida, incrementi lineis et transversim concinne confertim striata; apertura latiuscula, super verticem aliquanto producta, ad basim dilatata; columella parum incrassata, spiraliter intorta; umbilici regio callo tenui haud nitido (qui ad verticem pertendit) oblecta. Long. 11 mill., diam. 9.

*Hab.* —?

This is a remarkably roundly ovate species, very finely transversely striated, which produces a somewhat silky appearance, and having the region of the umbilicus covered by a very thin dull callosity, which is extended along the whorl to the vertex.

Although the sculpture is very like that of the *H. insculpta*, Totten, the form is very different.

*Haminea malleata*.

B.M.

*H.* testa albida, subpellucida, quadrato-ovata, irregulariter malleata, transversim tenuiter incrementique lineis striata; apertura latiuscula, basi dilatata et aliquanto effusa; labrum super verticem complanatum vix productum medioque junctum; columella valde arcuata, callosa, reflexa.

Long. 12 mill., diam. 8.

*Hab.* —?



This species is remarkable for its short squarish form, the irregular malleation, the reflected columella, and the flattened vertex. Here and there are longitudinal depressions, giving the shell a somewhat wrinkled appearance.

*Haminea cuticulifera.*

B.M.

*H. testa* elongato-cylindræcea, superius inferiusque rotunde quadrata, tenui, alba, epidermide albido, nitente, verticem basimque versus luteo tincto, induta, incrementi lineis et superius basique transversim subdistanter striata; apertura latiuscula, basi dilatata, super verticem vix producta; columella brevis, subrecta, reflexa, umbilici regionem obtegens, callo tenuissimo haud nitido vertici juncta; labrum tenue, verticis medio junctum et ibi incrassatum.

Long. 14 mill., diam.  $6\frac{1}{2}$ .

*Hab.* New Zealand and Port Jackson.

The lateral outlines of this species are nearly straight; the superior striæ are about six in number, the inferior about eighteen. *H. papyrus*, A. Ad., is its nearest ally; but it is narrower, more elongate, with the striæ not covering the whole of the shell, the vertex is more depressed, and the aperture is less broadly dilated and more effused at the base.

*Haminea perplexa.*

B.M.

*H. testa* ovato-cylindræcea, cæruleo-alba, pellucida, superius inferiusque opaca, lactea, transversimque distanter striata, medio lævi, incrementi lineis striata; vertex valde depressus, medio subperforatus; apertura angusta, super verticem vix producta, basi aliquanto latior; columella simplex, leviter reflexa.

Long. 14 mill., diam.  $7\frac{1}{2}$ .

*Hab.* —?

This species has much of the aspect of the genus *Atys*; but it is without the sinuosity of the labrum at the vertex, and is there slightly perforated. The superior striæ are about seven in number, the inferior about twice as many.

*Haminea æquistriata.*

B.M.

*H. testa* oblonga, cylindræcea, lateribus rotundatis, alba, pellucida, tenui, nitida, incrementi lineis irregularibus transversimque striata; striæ (circiter 36) sub- et æquidistantes; vertex aliquanto depressus; apertura latiuscula, basi dilatata; labrum tenue verticis medio junctum; columella curvata, leviter reflexa.

Long. 12 mill., diam. 6.

*Hab.* Gulf of Suez. Dredged by Mr. R. M'Andrew.

This species has much of the form of *H. rugosa*; but it is



much larger, the lines of growth are very slight, and the equidistant transverse striæ which are over the whole surface at once separate it.

*Haminea rugosa.*

B.M.

*H. testa* cylindræa, lateribus curvatis, alba, pellucida, superius leviter inferiusque distinctius striata, incrementi lineis irregulariter rugosa; vertex parum depressus; apertura latiuscula, basi dilatata; labium tenue, superius subangulatum verticis medio junctum; columella brevis, reflexa, rimam parvam fere tegens, subtruncata.

Long. 6 mill., diam. 3.

*Hab.* Gulf of Suez and Persian Gulf.

This shell belongs to the same group as *brevis*, Q. & G. It is peculiar for the longitudinal irregular wrinkles formed by occasional deep lines of growth.

*Cylichna nitens.*

B.M.

*C. testa* ovata, semipellucida, cæruleo-alba, nitente, longitudinaliter indistincte et transversim superne basique striata; vertex exigue umbilicatus; apertura angusta, aliquanto ad basim dilatata; labrum solidum, crassum; columella crassa, medio dente parvo vel tuberculo munita; umbilici regio subperforata.

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

*Var.* Testa major, minus solida. Long. 6 mill., diam. 3.

*Hab.* Fiji Islands.

A small, semitransparent, bluish-white species, chiefly characterized by the thick labrum and columella, which has a small tooth or tubercle on the middle of it.

*Cylichna propinqua.*

B.M.

*C. testa* elongata, cylindræa, paululum medio contracta, alba, epidermide pallide brunnea, quæ superne inferneque brunnior est, induta; transversim exilissime undulatim striata; vertex excavatus, medio anguste perforatus, margine acuto succinctus; apertura superne angusta, inferne dilatata; labrum anfractui fere parallelum; columella spiraliter tortuosa.

Long. 13 mill., diam. maj. 5.

*Hab.* Vancouver's Island.

This species in general aspect reminds one of the common *C. arachis*, Q. & G.; but it is considerably narrower, with the vertex only excavated with a minute perforation, not umbilicated, and the basal margin of the aperture is roundly truncate.



*Cylichna fijiensis*.

B.M.

*C. testa* perelongata, angusta, cylindracea, paululum medio contracta, alba, transversim exilissime striata, striæ versus verticem distantiores quam cæteræ, incrementi lineis indistinctis longitudinaliter striata, vertice (qui margine acuto circumdatus est) profunde umbilicata, basi subperforata; apertura superne angustissima, inferius dilatata; columella crassiuscula, spiraliter torta, apici callo tenui juncta.

Long. 6 mill., diam. 2.

*Hab.* Fiji Islands.

A pure white shining species, of nearly the same form as *C. biplicata*, A. Ad., but rather narrower, with the columella only spirally twisted, and the transverse striæ finer.

*Cylichna lacteocincta*.

B.M.

*C. testa* minuta, cylindracea, pellucida, fasciis pluribus interruptis lacteis cincta, longitudinaliter exilius curvatim, et transversim modo inferius striata; vertex umbilicatus, margine rotundato circumcinctus; apertura superne angusta, basim versus sensim dilatata; columella incrassata, oblique subtruncata.

Long.  $2\frac{1}{2}$  mill., diam.  $1\frac{1}{4}$ .

*Hab.* — ?

This species may be at once recognized by the lacteous bands upon a hyaline ground, and by the peculiar subtruncation of the columella, which almost forms a short channel with the outer lip.

*Cylichna pumilissima*.

B.M.

*C. testa* minutissima, breviter cylindracea, aliquanto medio contracta, superne quadrata, alba, longitudinaliter curvatim lirata; vertex umbilicatus, margine rotundato; apertura superne angusta, ad basim perdilatata; columella spiraliter torta.

Long.  $1\frac{1}{4}$  mill., diam.  $\frac{3}{4}$ .

*Hab.* Persian Gulf (*Col. Pelly*).

This species was dredged by Col. Pelly in great numbers at a depth of 14 fathoms. It is remarkable for its minuteness, the longitudinal curved ridges, and the very dilated aperture towards the base.

*Cylichna consanguinea*.

B.M.

*C. testa* minutissima, elongato-cylindracea, alba, longitudinaliter curvatim striata; vertex umbilicatus, carina acuta circumcinctus; apertura superne angusta, inferne modice dilatata; labrum paululum medio contractum; columella spiraliter torta.

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

*Hab.* Persian Gulf, 14 fathoms (*Col. Pelly*).



This species differs from *C. pumilissima* in being much more elongate, and in having an acute keel around the vertical umbilicus; the basal part of the aperture is also less dilated.

*Cylichna perpusilla.*

B.M.

*C. testa minutissima, oblongo-ovata, superne latiore quam ad basim, pellucida, omnino lævi, nitente; apertura superne modice lata super verticem producta, basi paululum dilatata; vertex imperforatus, medio (ex quo surgit labrum) leviter depressus; columella crassiuscula, haud torta.*

Long.  $1\frac{1}{4}$  mill., diam.  $\frac{3}{4}$ .

*Hab.* Persian Gulf, 14 fathoms (*Col. Pelly*).

One of the smallest forms yet discovered. It is quite smooth, white, and shining, of an oval form, rather narrower at the base than towards the vertex.

*Cylichna (Mnestia) puncto-sulcata.*

B.M.

*C. testa late ovata, basi paululum angustata, tenui, haud pellucida, fusco-alba, transversim tenuiter sulcata; sulci 27, æquidistantes, confertim punctati; vertex umbilicatus, intus striatus, margine rotundato circumdatus; apertura lata, super verticem aliquanto producta; labrum tenue; columella incrassata, sinuosa; umbilici regio subperforata.*

Long.  $4\frac{1}{2}$  mill., diam. 3.

*Hab.* Tunis, North Africa.

This appears to be very distinct from any other species; and it is at once recognized by the 27 closely punctured striæ, which are at equal distances from each other.

*Cylichna (Mnestia) alboguttata.*

B.M.

*C. testa ovata, aliquanto basi attenuata, tenui, semipellucida, albidâ, confertim guttis lacteis opacis ornata, lævi, nitente, incrementi lineis et transversim exiliter striata, superne basique distinctius; vertex valde umbilicatus, intus transversim striatus, margine rotundato circumdatus; apertura superne latiuscula, basi latior; labrum tenue; columella incrassata, alba, reflexa, fissuram parvam fere tegens.*

Long. 8 mill., diam.  $4\frac{1}{2}$ .

*Var.* Testa pallide rosea, guttis numerosis rotundis albis variegata.

*Hab.* West Indies.

This species is at once known from *marmorata*, A. Ad., by the difference of form. It is without the contraction just below the vertex, the apical umbilicus is smaller and not surrounded by so sharp an edge, the striæ above and below are not so strongly marked, and the aperture is not so produced upwards as in that species.



*Cylichna (Sao) Pellyi*.

B.M.

*C. testa* pyriformi, basim versus duplo latiore quam ad verticem, alba, basi transversim distanter striata; vertex umbilicatus, extrinsecus lira (quæ striis longitudinalibus curvatis semisim evanescentibus decussata est) circumcinctus; apertura superne angusta, super verticem producta, inferius valde dilatata; columella brevis, incrassata; umbilici regio perforata.

Long. 4 mill., diam. maj. 2.

*Hab.* Persian Gulf (*Col. Pelly*).

This species is rather like *C. nitida*, A. Ad., in form; but it is considerably larger, and proportionally narrower towards the upper end.

Messrs. H. & A. Adams, in their 'Genera of Recent Mollusca,' vol. ii. p. 21, give the following characters to *Sao*, which they place as a subgenus of *Atys*:—"Shell pyriform, umbilicated; apex not perforated."

Of these characters the first two certainly apply better to some of the species of the genus *Cylichna* than to those of *Atys*, and the third is a false one; for in the descriptions of the species characterized by A. Adams, he mentions the vertex as being "subumbilicata" or "profunde perforata:" therefore I think *Sao* should be removed from *Atys*, and be placed as a subgenus of *Cylichna*, from which it differs chiefly in being pyriform.

*Tornatina liratispira*.

B.M.

*T. testa* cylindræa, superius parum latiore quam basi, alba, nitida, incrementi lineis curvatis striata; anfract. 5, superius acute marginati, primus tubercularis; spira brevissima, turrita, sutura late canaliculata, medio lira filosa divisa; apertura angusta, basi semisim dilatata; columella spiraliter uniplicata.

Long. 6 mill., diam. 3.

*Hab.* Rio Janeiro.

This species is nearly allied to *T. Knockeri*, Smith, Proc. Zool. Soc. 1872, from West Africa; but it may be known from it by its larger size, and the absence of the plications at the upper part of the body-whorl; the columellar fold also is less strongly developed. The very fine ridge in the middle of the sutural channel produces the appearance of a double edge to the whorls.

*Tornatina persiana*.

B.M.

*T. testa* minutissima, breviter cylindræa, alba, incrementi lineis curvatis rugosa; anfract. 3, primus ex tuberculo magno constat, cæteri superius lira magna rotundata circumcincti; sutura de-



pressa; apertura latiuscula, brevior quam anfractus ultimus, basi sensim dilatata; columella brevis, incrassata, haud torta.  
Long.  $1\frac{1}{3}$  mill., diam.  $\frac{3}{4}$ .

*Hab.* Persian Gulf, 14 fathoms (*Col. Pelly*).

Its minuteness constitutes the principal distinctive character of this species. The tubercle which forms the apex is proportionally very large.

*Planaxis puncto-striatus.*

B.M.

*P.* testa acuminato-ovata, nitida, alba, lineis spiralibus rufis, partim interruptis (in anfr. ult. circiter 9), cincta; spira elongata, apice obtuso; anfract. 6, parum convexi, primi 3 basimque versus transversim sulcati, cæteri crebre puncto-striati; apertura ovata, alba, spiram æquans; columella arcuata cum labro callositate juncta; labrum incrassatum, intus denticulatum; canalis basalis brevis.

Long.  $7\frac{1}{2}$  mill., diam.  $3\frac{2}{3}$ .

*Hab.* Gulf of Suez (*M<sup>c</sup>Andrew*).

This pretty species may be recognized from any other by the nine transverse red lines and the punctured striæ, about twenty in the body-whorl.

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XXXVII.—*On the Affinities of Palæozoic Tabulate Corals with Existing Species.* By A. E. VERRILL.\*

THE works of Milne-Edwards and Haime upon corals are so extensive and important, and their classification is so well understood and generally adopted, especially by geologists, that it is of great importance that their errors of classification should be pointed out and fully understood.

A very unfortunate mistake was made when they instituted the exceedingly heterogeneous and artificial group known as "MADREPORARIA TABULATA." This division was based wholly upon a single character of uncertain value, found in certain corals differing very widely among themselves in all other respects. This character, regarded by them as of such fundamental importance, was merely the existence of complete transverse septa or plates across the coral-tubes, or cells, occupied by the lower parts of the bodies of the coral-polyps, thus dividing the lower unoccupied portion of these coral-cells into a series of closed chambers, each plate in turn marking a former position of the base of the polyp which occupied the cell, as it grew upward. In most of the other corals, on the

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Smith, E. A. 1872. "XXXVI.—Remarks on several species of Bullidæ, with descriptions of some hitherto undescribed forms, and of a new species of Planaxis." *The Annals and magazine of natural history; zoology, botany, and geology* 9, 344–355. <https://doi.org/10.1080/00222937208696599>.

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