November 28, 1843.

William Yarrell, Esq., Vice-President, in the Chair.

A letter from Charles M. Willich, Esq., was read, in which that gentleman calls the attention of the Society to M. Gannal's method of preserving animal substances.

"From the observations made by M. Gannal, and reported to the Académie des Sciences at a recent sitting, it appears that arsenic does not permanently preserve animal substances, although it prevents, for the moment, a putrid fermentation.

"He alludes to his former communication, explaining how the salts of them act on the gelatin and preserve the animal matter from putrid fermentation by the combination of the two substances. The gelatin is thus rendered incapable of putrefaction; but the other evil, viz. the destruction by insects, is not avoided. For the latter object he proposes the following preparation:—

"1 kilogramme of sulphate of alum—1 kilog. = $2\frac{1}{4}$ lbs. avoird.;

"100 grammes of nux vomica in powder—100 grammes = $3\frac{1}{2}$ oz. av.;

"And 3 litres of water—3 litres = $5\frac{1}{4}$ imperial pints.

"The above to be boiled down to $2\frac{1}{2}$ litres, and then allowed to cool: the clear liquid is to be drawn off and serves for injection. The residue is employed in the following manner. With four table-spoonsful of this residue mix the yolk of one egg; let this paste be prepared as wanted. It is to be used for covering the interior of the skin, and particularly the fleshy parts which may have been left in skinning the animal. The yolk of egg serves to preserve the suppleness of the skin, tanned by the salts of alum.

"In order to preserve the feathers of birds he proposes three modes:—

"1. The employment of nux vomica in powder.

"2. An alcoholic tincture of 100 grammes of nux vomica, macerated in 1 litre of alcohol.

"3. An alcoholic solution of 2 grammes of strychnine in 1 litre of alcohol.

"Whatever mode may have been used for preserving the animal, the ravages of insects may be instantly arrested by covering with a soft brush the whole of the skin, either with the tincture or solution above described, as may be found best adapted.

"If the feathers of birds are of delicate colour, the solution of strychnine should be employed; and for those very delicate birds, where soaking in either of the preparations is not possible, the nux vomica must be used in powder, taking care to insert it well in the napes of feathers. In all cases the inside of the skin may be rubbed with the paste.

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"In conclusion he states that from his experience he feels assured—

"That no arsenical preparation can insure the preservation of animal substances ;

"That they are destroyed by exposure to the air for a period exceeding three years ;

"That those substances enclosed in hermetically sealed cases are destroyed even in one year ;

"That the soluble salts of alum are quite effective in arresting putrid fermentation ; and

"That the employment of the preparation of nux vomica, as described, perfectly preserves animal substances from the attacks of insects."

The following papers were read :—

"Descriptions of new species of the genus *Narica*, discovered by Hugh Cuming, Esq.," by M. Récluz.

Genre *NARICA*, Récluz.

Nerita species, Chemnitz ; *Sigaretus* species, Lamarck ; genre *Vanicoro*, Quoy et Gaimard olim ; genre *Narica*, Récluz, in litteras ; D'Orbigny (Alcide), Moll. Cuba ; genre *Merria*, Gray in Beechey's Voyage.

Caractères génériques.—Animal gastéropode, dioïque, marin, globuleux, à peine spiral. Tête portant un mufle assez saillant, munie de deux tentacules longs, renflés au milieu et subulés à l'extrémité, ayant à leur base externe des yeux sessiles et fort petits. Pied petit, parfaitement arrondi, séparé par un sillon profond d'un appendice antérieur ou chaperon sous-buccal, alongé, concave et en manière de trompe ; deux folioles membraneuses, assez larges, partent de chaque côté du pied et remontent en pointe vers la tête. Cavité respiratrice grande ainsi que la branchie dont les folioles sont en partie libres.

Coquille semiglobuleuse, externe, souvent transparente et mince, plus ou moins vitrée ou d'un blanc azuré, souvent aussi solide, opaque, blanchâtre et rarement rosée. Tours de spire striés, côtelés ou treillisés. Spire courte et couchée du côté de l'ouverture. Ouverture subarrondie, presque sémilunaire, un peu creusée en arc à la columelle, à bords désunis. Omphalique ouvert, souvent évasé et spiral, sans trace de funicule (*funiculus* cordon ombilical) et prolongé derrière le bord interne (*labium*) en une sorte de canal.

Opéracule petit, mince, papyracé, cartilagineux, sans trace de spire à son sommet et ne laissant même pas appercevoir ses élémens, fixé à la partie postérieure du pied et lui devenant perpendiculaire quand cette portion de l'animal est rentrée. Sa surface est finement rayonnée de stries.

Observations.—Ce genre comptait il y a peu de temps quelques espèces anciennement décrites par les auteurs, savoir—1°. *Nerita cancellata*, Chemnitz (*Sigaretus cancellatus*, Lamarck) ; 2°. *Nerita tuberosissima*, Montagu (*Narica tuberosissima*, nobis) ; 3°. *Narita glabrissima*, Brown (*Narica glaberrima*, nob.). Depuis quelques

auteurs en ont fait connaître d'autres, telles sont 4°. *Velutina cancellata*, Q. et G. (*Narica Quoyi*, nobis); 5°. *Natica margaritacea*, Potier (*Narica margaritacea*, nobis); 6°. *Velutina sigaretiformis*, Potier (*Narica sigaretiformis*, nobis). À ces espèces nous ajouterons deux autres découvertes par M. Alc. D'Orbigny, décrites et figurées par lui dans ses 'Mollusques de Cuba,' savoir—7°. *Narica lamellosa*; 8°. *Narica sulcata* (la *Narica striata*, D'Orb., est la même espèce que la *Natica margaritacea*, Potier, l. c.); une, 9°, par M. Le Guillou *Sigaretus helicoides*; huit autres dues aux recherches habiles de Mr. H. Cuming qui a enrichi la conchyliologie de coquilles nombreuses et précieuses dans tous les genres. Enfin quatre autres sont le produit de nos découvertes, ce qui fait un total de vingt-et-une espèces actuellement connues. C'est aux savans travaux de MM. Quoy et Gaimard sur les Mollusques recueillis dans leur voyage de circumnavigation sur la corvète l'Astrolabe que nous devons la connaissance de l'animal de ces coquilles, connaissance qui a fait cesser toute discussion sur leur classement. En effet, les uns voulaient avec Lamarck les admettre parmi les *Sigarets*, les autres avec Mr. Sowerby les placer au nombre des Natices, tandis qu'elles doivent être séparées de ces deux genres et être intercalées entre les *Coriocytes* de M. De Blainville (*Sigaretus*, Cuvier et Gray, non Lamarck ni Sowerby) et les *Nérites*, dans une famille particulière, à laquelle nous donnons le nom de Velutinides, *Velutinidae*. Cette famille comprendra les genres *Narica*, *Velutina*, *Fossarus*, et peut-être le genre *Neritopsis*, dont les rapports généraux sont si grands. Nous donnerons dans un autre travail des considérations étendues sur l'affinité de ces genres entr'eux. Nous eussions accepté avec plaisir le nom de *Vanicoro* imposé à ces coquilles par MM. Quoy et Gaimard, s'il n'était du nombre de ceux que la philosophie zoologique rejette comme impropres; de même que celui de *Merria*, proposé par Mr. Gray, s'il n'était postérieur à celui de *Narica* que nous avons fait connaître dans notre correspondance scientifique et publié dans une livraison des 'Mollusques de Cuba' de M. Alc. D'Orbigny, laquelle a paru par livraison avant la vente du 'Beechey's Voyage' de Mr. Gray. Ce nom de *Narica* a été employé autrefois par Théodore Gaza et Scaliger comme synonyme de *Nérita* (voyez Aldrovanda, De Testaceis, lib. ii.), et tire son étymologie de *Nar*, mot primitif qui désigne l'eau courante.

1. *NARICA CIDARIS*. *Nar. testâ orbiculato-ovatâ, ventricosâ, anticè dilatâtâ, supernè depresso-pland, solidiusculâ, lacted, plicis longitudinalibus anticè laxioribus, subregularibus, lineis elevatis transversis æquidistantibus reticulâtâ, scabriusculâ; spirâ prominulâ, semisphæricâ, apice retusâ; aperturâ subrotundâ, patulâ; labio arcuato; umbilico parvo, profundo; canali oblongo, angusto et viz arcuato.*

Hab. "From the island of Masbate, Philippines; found under stones at low water." H. Cuming.

Dimensions.—Long. 16 mill.; larg. 19 mill.; convexité 13 mill. *Ouverture*: long. 15½ mill.; larg. 12 mill. *Spire*, hauteur 5½ mill. C'est une espèce fort élégante.

2. *NARICA LIGATA*. *Nar. testâ ventricosso-ovata, tenuiusculâ, albd, longitudinaliter supernèque tenuiter plicatâ, lineis transversis elevatis intermediis minoribus ligatâ; spirâ prominenti, rotundatâ, radiatim plicatâ, apice obtusiusculâ; aperturâ subrotundâ, parvâ; umbilico pervio, spirali, profundo, latiusculo; canali brevi, largo; columellâ subrectâ, medio ad basim arcuatim rotundato.*

Hab. "From Catanuam, province of Tayabas, isle of Luzon; found under stones at low water." H. Cuming.

Dimensions.—Long. 12 à $16\frac{1}{2}$ mill.; larg. 19 à 20 mill.; convex. 10 à $13\frac{1}{3}$ mill. *Ouverture*: long. 11 à 13 mill.; larg. $8\frac{1}{2}$ à $10\frac{1}{2}$ mill. *Spire*, hauteur 7 à $8\frac{1}{2}$ mill.

3. *NARICA DESHAYESIANA*. *Nar. testâ ventricosso-globosâ, tenui, fragili, subepidermide lutescente tenuissimâ exalbidâ sive albd, læviter ac creberrimè transversim striatâ; anfractibus subsenis, supernè rotundatis, longitudinaliter argutè plicatis: plicis in ultimo posticè validis, remotiusculis, anticam partem versùs evanescentibus; spirâ semirotundâ, angustè plicatâ, subacutâ; aperturâ subsemilunari; umbilico magno, patulo; canali semilunari ad sinistram et internè carinato, externè radiatim profundè ac elegantè plicato; columellâ intus et ad basim sinuatâ.*

Var. β. *Testâ ventricosso-ovatâ, subglobosâ, plicis obsoletis; infimo anfractu angustiore.*

Hab. "From St. Nicholas, island of Zebu, Philippines; found under stones at low water: and var. β from Catanuam, province of Tayabas, isle of Luzon; found under stones at low water." H. Cuming.

Dimensions.—Long. 15 à 17 mill.; larg. 16 à 19 mill.; convex. 12 à 13 mill. *Ouverture*: long. $12\frac{1}{2}$ à 15 mill.; larg. $8\frac{1}{2}$ à $10\frac{1}{2}$ mill. *Spire*, hauteur 6 à 7 mill.

La var. β a la forme de la *Nar. ligata*, mais en diffère par ses stries toujours très fines, par ses plis nuls ou très peu apparent même au côté postérieur, par sa columelle sinueuse à sa base, et par les stries profondes qui entourent le pourtour de l'ombilic, comme sur le type auquel nous la réunissons. C'est au digne successeur des Bruguière et des Lamarck, c'est à l'émule de Sowerby que nous dédions cette belle espèce de Narice.

Opércule ovalaire, très mince, presque papyracé, cartilagineux, transparent, paillé, sans élémens spiraux au sommet, mais formant un angle par la réunion en faisceau des stries longitudinales rapprochées, rayonnant du sommet à la circonférence où elles se dirigent dans un seul légèrement arqué. Des stries circulaires et obsoletes, beaucoup plus pressées, croissent les longitudinales sans former de treillis sensible à la vue.

4. *NARICA PETITIANA*. *Nar. testâ orbiculato-ovatâ seu semiglobosâ, crassâ, albidâ, obliquè et crebrè plicatâ, lineis elevatis transversis, irregularibus, angustioribus et remotioribus reticulatâ; anfractibus depresso-rotundatis; spirâ semisphericâ, obtusatâ, posticè incumbente; radiatim plicatâ; aperturâ subrotundâ, dilatâtâ; labio vix arcuato, margine in senioribus externè complanato, submedio vix anguloso; umbilico parvo; canali angusto, elongato, parum arcuato et angulo angusto cincto.*

Hab. "From the island of Masbate, Philippines; found under stones at low water with *Narica cidaris*." H. Cuming.

Var. β . *Testâ tenuiore, plicis angustis regulariter dispositis, lineis transversis æquidistantibus clathratâ, scabriusculâ; umbilico magno, profundo, spiraliter contorto; canali latiusculo, profundo, falciformi.*

Dimensions.—Long. 20 à $24\frac{1}{2}$ mill.; larg. 24 à $27\frac{1}{2}$ mill.; convex. $16\frac{1}{2}$ à 20 mill. *Ouverture*: long. 18 à 23 mill.; larg. 14 à 13 mill. *Spire*, hauteur $9\frac{1}{2}$ à $10\frac{1}{2}$ mill.

5. *NARICA CUMINGIANA.* *Nar. testâ semiglobosâ, ventricosâ, tenuiusculâ, exalbiddâ, transversim regulariter sulcatâ, longitudinaliter ac obliquè lineatâ, cancellatâ, scabriusculâ, ad sectiones granulatâ; spirâ prominulâ, suprâ planâ, latere carinatâ, sulcis reticulatâ et punctis valdè impressâ; apice posteriori, acuto; aperturâ dilatâ, semilunari; umbilico profundo, coarctato, canali semilunari-oblongo, extûs annulo acuto cincto; labio supernè tenui, infernè incrassato; labro intûs submarginato.*

Hab. "From Catbalonga, island of Samar, Philippines; found in coarse sand at ten fathoms." H. Cuming.

Dimensions.—Long. 13 mill.; larg. $13\frac{1}{2}$ mill.; convex. 10 mill. *Ouverture*: long. 11 mill.; larg. 8 mill. *Spire*, hauteur 5 mill.

C'est à l'infatigable voyageur, à l'auteur d'un grand nombre de découvertes de coquilles intéressantes, que nous dédions cette belle espèce de Narice, remarquable par sa spire sculptée de trous imitant ceux d'un dé à coudre.

6. *NARICA PPLICATA.* *Nar. testâ ventricosâ-ovatâ, subglobosâ, solidâ, albâ, longitudinaliter grossè plicatâ, lineis elevatis crebrioribus costas decussantibus circumcinctâ; anfractibus supernè depresso-planiusculis; spirâ prominulâ, laterali, subacutâ; aperturâ subrotundâ; umbilico latiusculo, profundo, spirali; canali semilunari, crenulis profundis extûs cincto; columellâ arcuatâ, basi et anticè gibbosiusculâ.*

Hab. "From the island of Ticao; found under stones at low water." H. Cuming.

Dimensions.—Long. 17 mill.; larg. 19 mill.; convex. 14 mill. *Ouverture*: long. 13 mill.; larg. 10 mill. *Spire*, hauteur 7 mill.

Belle espèce voisine par sa forme de la *Narica ligata*, dont elle diffère par ses plis et son ouverture.

7. *NARICA GUERINIANA.* *Nar. testâ orbiculato-ovatâ, depressâ, subconoided, subtûs planâ, crassâ, albido-lutescente, obliquè costatâ; costis rotundatis sulcis majoribus, interdum æqualibus, lineis transversis creberrimis eleganter cinctâ; spirâ semiglobosâ, obtusiusculâ; aperturâ semilunari, patulâ; umbilico profundo, extûs dilatato, in canalem latum, semisphæricum, extûs angulatum explanato; columellâ rectâ, suprâ lined tenuiter impressâ instructâ.*

Hab. "From the island of Capul, Philippines; found under stones at low water." H. Cuming.

Dimensions.—Long. 9 à $12\frac{1}{2}$ mill.; larg. 11 à 15 mill.; convex. 7 à 9 mill. *Ouverture*: long. 9 à 11 mill.; larg. 6 à 8 mill. *Spire*, hauteur $5\frac{1}{2}$ à 6 mill.

Nous faisons hommage du nom de cette belle Narice à M. Guérin-Méneville, savant entomologiste Français, auquel la conchyliologie doit la connaissance de beaucoup de Mollusques nouveaux dont il gratifie généreusement les disciples de cette science.

8. *NARICA DISTANS*. *Nar. testá parvá, orbiculato-conicá, tenuiusculá, pellucidá, albidd, costis longitudinalibus obliquis, angustis acutis valde remotis, regulariter radiatá, interstitiis sub lente tenuissimè et creberrimè striatis; spirá exsertiusculá, gradatá, conico-acutá; aperturá semiotundá; umbilico dilatato, profundo; canali largo, semicirculari, intùs striato, extùs angulo acuto circumdato.*

Hab. "From Jacna, isle of Bohol, Philippines; found under stones at low water." H. Cuming.

Dimensions.—Long. 7 mill.; larg. 8 mill.; convex. $5\frac{1}{2}$ mill. *Ouverture*: long. 5 mill.; larg. 4 mill. *Spire*, hauteur 3 mill.

Les côtes de cette Narice ont un demi millimètre de hauteur.

9. *NARICA ROSEA*. *Nar. testá minimá, semiglobosá, roséá, tenui, striato-cancellatá, regulariter granosá; anfractibus tribus, supernè depresso-planiusculis; spirá prominulá, apice levi, mammillatá, rubicundá; aperturá semiotundá; columellá rectiusculá, albidd, umbilico largo, extùs in canalem latiusculum, semiorbicularem producto; labro intùs striato.*

Hab. Les Moluques (M. Hardouin-Michelin).

Dimensions.—Long. 3 mill.; larg. 3 mill.; convex. 2 mill. *Ouverture*: long. $2\frac{1}{3}$, larg. $2\frac{1}{2}$. *Spire*, hauteur $1\frac{1}{3}$ mill. Cabinet de M. Récluz. Sa petitesse la rend très rare.

10. *NARICA GRANULOSA*. *Nar. testá parvá, semiglobosá, tenui, subpellucidá, albd sive albido-lutescente; anfractibus supernè planulatis, ferè gradatis, transversim regulariter striato-costatis; costis angustioribus obliquè striatis ac cancellato-granosis; spirá prominulá, semiglobosá, acutá; aperturá semiotundá, vitred; columellá tenui vix arcuatá; umbilico profundo; canali latiusculo, semicirculari.*

Var. β. Testá albo-vitred, hyalind.

Hab. Les Moluques et la Nouvelle Hollande.

Dimensions.—Long. 7 mill.; larg. 9 mill.; convex. 6 mill. *Ouverture*: long. 6 mill.; larg. 5 mill. *Spire*, hauteur 4 mill. Cabinet de M. Récluz. Peu commune.

11. *NARICA ORBIGNYANA*. *Nar. testá ovato-globosá, crassiusculá, lactéd, transversim cingulatá: cingulis 5–6 obtusis, majoribus, lineis longitudinalibus decussantibus, cancellato-granosá; spirá planissimá, ad peripheriam tricarinatá: carinis obtusis, infimis majoribus; apice valde laterali, acuto, hyalino, levissimo; aperturá ovato-rotundatá; columellá basi crassiusculá et anticè calloso-gibbá, supernè tenuissimá; umbilico minimo, subclauso; canali lineari suprecto.*

Hab. La Nouvelle Hollande, sur les côtés de l'île Maria; très rare.

Cabinet de M. Récluz. Les caractères la rendent très distincte des *Narica Cumingiana* et *N. sulcata* (D'Orbigny).

Dimensions.—Long. 12 mill. ; larg. $12\frac{1}{2}$ mill. ; convex. 8 mill. *Ouverture* : long. 10 mill. ; larg. 7 mill. *Spire*, hauteur $5\frac{3}{4}$ mill.

12. *NARICA BLAINVILLEANA*. *Nar. testâ ovato-globosâ, anticè dilatâ, striis transversis inæqualibus aratâ, posticè tenuiter plicatâ : plicis anticè obsoletis ; spirâ parvulâ, semisphæricâ, regulariter plicatâ, laterali, apice fuscâ ; aperturâ subrotundâ, lacteâ ; columellâ arcuatâ, basi et intus subcompressâ ; umbilico profundo, angusto, in canalem semilunarem productâ ; labro rotundato, intus lævissimè striato,*

Hab. Les Moluques.

Dimensions.—Long. 10 mill. ; larg. 11 mill. ; convex. $8\frac{1}{8}$ mill. *Ouverture* : long. 9 mill. ; larg. 7 mill. *Spire*, hauteur 4 mill. Cabinet de M. Récluz.

Cette espèce a beaucoup de ressemblance avec le *Narica cancellata*, nob. (*Sigaretus cancellatus*, Lamarck ; *Merria cancellata*, Gray.) Elle est toujours plus petite, moins mince et transparente, à spire plus saillante, et à dernier tour nullement treillisé ni rude au toucher. Elle est assez rare.

13. *NARICA SIGARETIFORMIS*. *Nar. testâ globoso-acutâ, tenui, exalbidd, pellucidâ, fragili ; anfractibus 5-6 transversim subtilissimè striatis ; spirâ prominenti, conico-acutâ ; apice elongato, corneo-fusco ; aperturâ semirotondâ ; columellâ tenuissimâ, viâ rectâ ; umbilico rotundato, dilatato, profundo, spirali, in canalem subseus oblongum productâ.*

Velutina Sigaretiformis, Potier, Gal. Moll. Mus. Douai, pl. 39. f. 21, 22, *malæ*.

Hab. La Nouvelle Hollande, très rare.

Dimensions.—Long. 7 mill. ; larg. 7 mill. ; convex. $5\frac{1}{4}$ mill. *Ouverture* : long. 5 mill. ; larg. 3 mill. *Spire*, hauteur $2\frac{3}{8}$ mill.

M. Potier a donné de cette espèce une description très vague et incomplète qui ne permet pas de la reconnaître ; elle n'est pas d'ailleurs dans les formes suivies dans les sciences. Les figures que cet auteur a publiées ne montrent pas le *nucleus* allongé, cylindrique, aigu, très fin et d'un corré-brun qui caractérise cette Narice. Ces diverses considérations m'ont porté à en donner une description plus correcte. Cabinet de M. Récluz.

"Descriptions of new species of *Delphinula*, a genus of pectinibranchiate Mollusks, collected for the most part by H. Cuming, Esq. in the Philippine Islands," by Mr. Lovell Reeve.

1. *DELPHINULA SCALARIOIDES*. *Delph. testâ globulosâ, albâ ; anfractibus rotundis, varicosis, varicibus elevatis, solidis, annuliformibus ; interstitiis transversè striatis, striis elevatis ; intus margaritaced.*

Conch. Icon. *Delphinula*, pl. 3. fig. 11, *a* and *b*.

Hab. Island of Mindanao, Philippines (under stones at low water) ; Cuming.

The whorls of this species, which is not punctured like the *Delphinula Peronii*, are encircled with solid rings about seven to the whorl, after the manner of a *Scalaria*; the shell might indeed be mistaken for one, were it not for its solidity and pearly interior.

2. *DELPHINULA VARICOSA*. *Delph. testâ angulato-globosâ, albâ, foraminibus sparsim puncturatâ; anfractibus supernè angulatis, fortiter varicosis, varicibus multicarinatis et elevato-striatis; intus margaritaced.*

Conch. Icon. *Delphinula*, pl. 3. fig. 12, *a* and *b*.

Hab. Island of Corregidor, Philippines (found in sandy mud); Cuming.

This species differs from the *Delphinula Peronii* in having the spire more prominent, and varices entirely across the whorls; they are also more strongly and closely set; the shell is moreover much more sparingly punctured.

3. *DELPHINULA DEPRESSA*. *Delph. testâ plano-rotundatâ; spirâ valdè depressâ, foraminibus puncturatâ; albâ; anfractibus supernè angulatis, fortiter varicosis, varicibus ad angulum acuminato-elevatis; intus margaritaced.*

Conch. Icon. *Delphinula*, pl. 3. fig. 14, *a* and *b*.

Hab. Island of Camiguin, Philippines (under stones at low water); Cuming.

No one can fail to recognize this species, by its depressed spire and by the pointed elevation of the varices on the angle of the whorls.

4. *DELPHINULA DISCOIDEA*. *Delph. testâ discoïdè; spirâ plano-depressâ, liris longitudinalibus et transversis, interstitiis subtiliter striatis, eximè clathratâ; peripheriâ carinis duabus clathratis prominentibus ornatâ.*

Conch. Icon. *Delphinula*, pl. 4. fig. 15, *a* and *b*.

Hab. Cagayan, island of Mindanao, Philippines (found in coarse sand at the depth of ten fathoms); Cuming.

The latticed sculpture of this shell very much resembles the character of a figure in plate 31 of the 'Magasin de Zoologie' for 1834, under the appellation of *Delphinula adamantina*, Duclos. It differs, however, essentially from that species in form, and I regret to say the *D. adamantina*, according to the figure alluded to, is quite unknown to me, though elaborately described by Deshayes in the ninth volume of his edition of Lamarck's 'Animaux sans vertèbres.'

5. *DELPHINULA EVOLUTA*. *Delph. testâ spiraliter discoïdè, partim evolutâ; anfractibus subquadratis, marginibus corrugato-crenatis.*

Conch. Icon. *Delphinula*, pl. 4. fig. 16, *a* and *b*.

Hab. Island of Corregidor, Bay of Manila (found in coarse sand at the depth of seven fathoms); Cuming.

The loose manner in which this shell is rolled, giving it the appearance of a miniature hunter's-horn, is not a casual deformity. Several specimens were collected by Mr. Cuming at the above-mentioned island.

6. *DELPHINULA MURICATA*. *Delph. testâ turbinatâ, pallidè aurantio-*

fulvd, maculis coccineis vividè aspersd; anfractibus carinis tribus prominentibus muricato-squamulosis cinctd, supra et infra subtiliter corrugato-striatis; suturis peculiariter profundis.

Conch. Icon. *Delphinula*, pl. 4. fig. 18, *a*, *b* and *c*.

Hab. East Indies; Humphreys MSS.

This is by no means a newly-discovered species, the specimens here figured having been found in the old collection of the late Mr. George Humphreys, with the name and locality above used attached to them in his handwriting.

7. *DELPHINULA CLATHRATA.* *Delph. testd subdiscoideid, anfractibus rotundatis, carinulis transversis et longitudinalibus æquidistantibus regulariter clathratis; labro incrassato, marginato; umbilico per-amplio.*

Conch. Icon. *Delphinula*, pl. 5. fig. 21, *a* and *b*.

Hab. Island of Corrigidor, Bay of Manila (found in coarse sand at the depth of seven fathoms); Cuming.

A small species, with a regular latticed surface.

8. *DELPHINULA COBIJENSIS.* *Delph. testd turbinatd, minutd; anfractibus convexis, carinulis transversis et longitudinalibus, æquidistantibus regulariter clathratis; umbilico mediocri; labro simplici.*

Conch. Icon. *Delphinula*, pl. 5. fig. 22, *a* and *b*.

Hab. Port of Cobija, Peru (found under stones in rocky places at low water); Cuming.

The sculpture of this shell, familiarly known to Mr. Cuming as his "little Cobija species," is exactly similar to that of the *D. clathrata*; it is however much less discoid in form, the whorls are not so round, the umbilicus is smaller, and the lip is not marginated.

9. *DELPHINULA SYDEREA.* *Delph. testd turbinatd, spirâ plano-concavâ, apice interdum rosaceo, anfractibus angulato-convexis, tuberculis muricatis, in seriebus duabus aut pluribus radiatim stellatis; labro incrassato, marginato.*

Conch. Icon. *Delphinula*, pl. 5. fig. 23, *a* and *b*.

Hab. Island of Camiguin, Philippines (found under stones at low water); Cuming.

The leading feature of this species, and which is especially prominent in young specimens, is its peculiar star-like display of tubercles; the concave flatness of the spire is also remarkable.

10. *DELPHINULA CIDARIS.* *Delph. testd subgloboso-turbinatd, solidâ; anfractibus transversim et longitudinaliter tuberculato-costatis, costis longitudinalibus majoribus, prominentioribus; anfractuum parte inferiori foraminosâ.*

Conch. Icon. *Delphinula*, pl. 5. fig. 27.

Hab. Calapan, island of Mindoro, Philippines (found in coarse sand at the depth of ten fathoms). This is the roundest and most solid species of the genus.

Mr. Reeve also described a fine new species of *Voluta*, collected

off the coast of New Holland, north of Swan River Settlement, in H.M.S. Beagle.

VOLUTA RETICULATA. *Vol. testâ elongato-ovatâ, lævigatâ, pallidè fulvâ, fusco vel spadiceo-fusco per totam superficiem subtilissimè trigono-reticulatâ, reticulâ bifasciatim confusâ; anfractibus flammis brevibus spadiceis longitudinalibus, prominentibus, prope suturas vivide pictis; apertura fauce spadiceo-fusca.* Long. $3\frac{1}{2}$ in.; lat. $1\frac{1}{2}$.

Hab. Coast of New Holland, north of Swan River Settlement.

This beautiful new Volute somewhat resembles the *Voluta pallida* in form, and is of nearly the same ground tint of colour; here, however, the resemblance ceases, it being entirely covered with a fine brown net-work, with two broad bands formed by a rich amalgamation of the net-work. The most striking feature of the shell is in the upper part of the whorls being vividly ornamented with a close-set row of undulating flames of rich brown running down from the sutures, and the enamelled lining of the aperture is of the same uniform rich brown. Of the two specimens just imported in H.M.S. Beagle, one is in the collection of Thos. Norris, Esq., of Redvalves; the other in that of J. Dennison, Esq., of Woolton Hill. There is a bad specimen of this Volute in the British Museum, and another in the collection of William Metcalfe, Esq.

Prof. Owen then read the second and concluding part of his memoir on the *Dinornis**.

The arrival of the second box of specimens of the bones collected by the Rev. W. Williams in Poverty Bay, New Zealand, which had been placed by Dr. Buckland in Mr. Owen's hands, had enabled him to confirm his former account of the generic characters and ordinal affinities of the apparently extinct *Dinornis*, and also to distinguish remains of five species of that genus.

The bones of the foot, and especially the tarso-metatarsal bone, established three distinct species, the largest of which the author proposed to call *Dinornis giganteus*; the next in point of size he termed *Din. struthoides*, and the third *Din. didiformis*. The common generic characters of the tarso-metatarsi of these species were first pointed out, and then their specific differences of proportion and figure. The maturity of the different-sized bones indicating the above species was demonstrated by reference to the long retention of immature characters in the same bone of existing *Struthionide*, and by the fact of a tarso-metatarsal bone of a half-grown *Dinornis giganteus* manifesting the same incomplete coalescence of its primitively distinct elements; showing that the *Dinornis*, like the Ostrich, had a tardy ossification of the skeleton, as compared with birds of flight. The tibiae were next described; one of these, belonging to a mature bird, established a species smaller than the *Din. didiformis*, and which, from its similarity of stature to the great Bustard (*Otis tarda*), Prof. Owen proposed to call *Dinornis otidiformis*. The

* See Proceedings, January 1843.

largest tibia, belonging to the *Din. giganteus*, presented the extraordinary dimensions of two feet eleven inches. The shaft of a smaller tibia, about two feet long when entire, was referred to the *Din. struthoides*, and there were four entire tibiae of the *Din. didiformis*. In the series of femora, after the description of the generic characters of the bone, the specimens were pointed out which belonged to the *Dinornithes giganteus*, *struthoides*, *didiformis*, and *otidiformis*, and two other entire femora were described and their distinctive characters shown, which indicated, unequivocally in the author's opinion, a fifth species of *Dinornis*, of the size of the Emeu, and which was, therefore, named *Din. dromæoides*.

Three pelves, more or less perfect, and portions of two others, were described, and were referred to the *Din. giganteus*, *dromæoides*, and *didiformis*. Three cervical and two dorsal vertebræ also indicated three distinct species of *Dinornis*, and all of them presented the common character of unusual strength of the spinous and transverse processes. Comparative dimensions of most of the bones exhibited were given. No part of the skull, sternum, ribs or wing-bones had been transmitted, but Prof. Owen proceeded to point out the physiological grounds for concluding that the development of the anterior extremities must have presented in the *Dinornis* an intermediate condition between that in the Emeu and that in the Apteryx.

The author then gave his calculations, from the analogies of existing Struthious birds, of the height of the different species of *Dinornis*. The largest, *Din. giganteus*, according to the proportions of the Ostrich, must have stood ten feet five inches, but according to those of the Cassowary, nine feet five inches; its average stature might be taken at ten feet. A diagram of the great extinct bird, restored according to these proportions, was exhibited.

The *Dinornis struthoides* was seven feet high, which is the average stature of the *Struthio Camelus*.

The length of the tibia and metatarsus of the *Din. dromæoides* not yet being known, the height of five feet was assigned to it as a probable one; its femur corresponds in size with that of the Emeu, whose average measurement in captivity is between five and six feet.

The height of the *Din. didiformis* was four feet; exceeding, therefore, the extinct Dodo (*Didus ineptus*), but evidently resembling it in its stouter proportions and shorter metatarsus, as compared with the other species of *Dinornis*.

Prof. Owen next proceeded to consider the evidences of tridactyle birds afforded by the impressions in the New Red Sandstone of Connecticut, called 'Ornithichnites,' and having pointed out the proportions of the tarso-metatarsal bone in existing Struthious birds to their foot-prints, indicated thereby the size of the same bone in different *Ornithichnites*, and reciprocally the sizes of the foot-prints of the different *Dinornithes*, from those of their tarso-metatarsal bones.

The two phalanges of the *Dinornis*, which were described and compared in this section of the memoir, afforded pretty clear indications of the form and proportions of the toes in the two species

(*giganteus* and *didiformis*) to which they were referred. These data showed that the trifid foot-print of the *Dinornis giganteus* must have exceeded in size the *Ornithichnites giganteus* and *O. ingens* of Prof. Hitchcock, and that the *Din. didiformis* must have left impressions as large as those called *Ornithichnites tuberosus*. The author warned his hearers against inferring identity of species or even genus between the extinct *Struthionidæ* of the alluvium of New Zealand and those of the trias of North America, on account of correspondence of size and number of toes, which the modern genera *Casuaris*, *Rhea*, &c. proved to be insufficient grounds. He concluded by a comparative review of recent and extinct *Struthionidæ*, remarking on their peculiar geographical distribution, on the conditions which favoured the former existence of so rich a development of the family in New Zealand, and on the probable causes of their extermination. Evidence of the recent character of the bones described was afforded by the great proportion of animal matter which they retained, and the details of the analysis of the earthy salts were promised for a future Meeting.