

the two optic nerves appeared to unite without decussation ; the eye was large, and two pupils existed ; the nostrils were absent."

Dr. Crisp remarked, that although the Cyclops variety of monstrosity was not very rare, but few cases were on record of the dissection of the brain.

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June 10, 1856.

Dr. Gray, F.R.S., in the Chair.

I. ON TWO NEW SPECIES OF HUMMING BIRDS BELONGING TO THE GENUS *AMAZILIUS*. BY JOHN GOULD, F.R.S., V.P.Z.S., ETC.

*AMAZILIUS CERVINIVENTRIS*, Gould.

Head, all the upper surface and wing- and upper tail-coverts bronzy-green ; wings purplish-brown ; tail dark chestnut-red, each feather narrowly bordered and tipped with a bronzy lustre, which is of greatest extent and most conspicuous on the two centre tail-feathers ; throat and chest luminous green ; under surface of the shoulder and flanks dull green ; abdomen and under tail-coverts fawn-colour ; thighs white ; upper mandible yellow at the base, merging into brown and tipped with black ; under mandible pale yellow, except at the tip, which is black.

Total length, 4 inches ; bill,  $\frac{15}{16}$  ; wing,  $2\frac{1}{4}$  ; tail,  $1\frac{5}{8}$ .

*Hab.* Cordova, in Mexico. Collected by M. Sallé.

*Remark.*—This species is about the size of *A. Riefferi* ; but its bill is less robust ; the wings, as in that species, are uniform purplish-brown ; the chestnut colouring of the tail-feathers and the under tail-coverts is of a somewhat lighter hue.

*AMAZILIUS CASTANEIVENTRIS*, Gould.

Crown of the head, upper part of the back and shoulders reddish-bronze ; rump and upper tail-coverts greyish, with a bronzy lustre ; wings purplish-brown, with the exception of the basal portion of the primaries and secondaries, which are rufous ; tail dark chestnut, tipped with a bronzy lustre, of greatest extent and most conspicuous on the centre feathers ; throat, fore part of the neck, breast, and upper part of the abdomen shining golden-green ; under surface of the shoulders, lower part of the abdomen and under tail-coverts fine chestnut-red ; thighs white ; upper mandible brownish-black ; under mandible fleshy-yellow, except at the tip, which is brownish-black.

Total length,  $3\frac{1}{2}$  inches ; bill,  $\frac{7}{8}$  ; wing,  $2\frac{1}{16}$  ; tail,  $1\frac{1}{4}$ .

*Hab.* Santa Fé de Bogota. From the Collection of Mr. Mark.

*Remark.*—This species differs from *A. cerviniventris* in the much greater depth of the chestnut colouring of the abdomen, under tail-



coverts and tail; in size it is considerably less than that species, being even smaller than *A. Arsinoë*, to which it offers an alliance in the colouring of its wings, but from which it differs in the colouring of its abdomen; the white feathers of the thighs are much developed and very conspicuous.

## 2. ON SOME DEFECTS IN THE GROWTH OF THE ANTLERS, AND SOME RESULTS OF CASTRATION, IN THE CERVIDÆ.

BY JOHN S. GASKOIN, F.L.S. ETC.

The imperfect growth of one antler, or horn, in any species of the Deer tribe, the other being fully developed according with the age of the animal, I find has been, from time immemorial, popularly attributed to some disease or ailment of the testicle, or kidney, or even of a limb, of the side on which the defective antler may exist; so that to doubt its truth now would, to the uninquiring, seem to be mocking experience. Some time ago, a member of this Society exhibited at one of the scientific meetings the head of a Fallow Deer (*Cervus Dama*), which had been killed in Richmond Park, for the table, and selected, of course, from its mature age and fine condition; one antler of which was of ample growth for an eight years old animal, while the other consisted simply of the brow tine or antler and a short beam, each about eight or ten inches in length; and the park-keeper had ascribed this deficient development to disease of the kidney of the same side. No light was thrown on the subject at the time, and members, to whom the opportunity might occur, were invited to inquire into the correctness or otherwise of the attributed cause in other instances. It was the first occasion on which I had heard the question mooted. The deduction given, as to cause and effect, was obviously at variance with sound physiology. That the growth of a horn on one side should be impeded, and not that on the other also, when disease of a kidney, a testis, &c. is the cause of arrested production, must be from some accidental circumstance, and cannot be incidental to any such derangement; for organic disease of the viscera named, or of any other viscus, always deteriorates more or less, according to its severity and duration, the general constitutional health, and not that of a particular part only of the animal economy;—and moreover, the disease of no organ in a more remarkable manner influences by depressing the powers of the system, nor tends more surely to a fatal termination, than organic disease of the kidney;—whereas, in the case adduced as having arisen from such a disease, the animal was, on the contrary, in excellent health and admirable case. A paradox so apparent induced me to desire to investigate the subject, with the view of setting aside a popular error, if such, and substituting a rational deduction from facts; and having communicated my wish to Colonel Francis H. Seymour, deputy-ranger of Windsor Great Park, in which a larger stock of deer is kept than perhaps in any other in the kingdom, he most readily bid me furnish him with a written list of what I might require to prosecute my intention. It enumerated,—the head, with the antlers attached, of any buck that



might be shot, having one horn only, of defective development; the kidneys, and the testes with their appendages, of the same animal; denoting the side from which each organ had been taken. This he very kindly immediately forwarded to John Cole, the head-keeper, with orders to carry out my wish on any opportunity occurring; and during the autumn of 1853 I received three cases, each containing all I had solicited, and the several parts duly labeled, as I had requested\*. The antlers attached to the skulls of two are now on the table, and the other pair of antlers, which were detached. All these bucks were over eight years of age. I carefully examined the several organs belonging to each individual, having the advantage of the assistance of my friend Dr. Crisp in the first and the third examples; and I claim credit from the Society, on the part of both Dr. Crisp and myself, for knowledge of the difference of healthy from diseased structure. We found that every organ examined of each of the three animals was perfectly healthy, normal, and in every respect fully developed, as were all the animals from which they had been taken in most unexceptional health and in high condition; in testimony of which they had been killed for the table.

I will now give the measurements of the antlers, and the weights of the testes and kidneys, of all the three animals, designating the side from which each had been taken respectively.

#### *Measurements of the Antlers.*

<i>Developed Antler.</i>		<i>Defective Antler.</i>	
	in.		in.
No. 1. Beam, to the anterior point of the palm ..	22 $\frac{1}{2}$	A simple bifurcation.	
Brow tine, or antler ..	8	Beam .....	10 $\frac{1}{2}$
Bis tine, or antler ....	4 $\frac{5}{8}$	Brow tine, or antler ..	7
<i>Vide fig. 1.</i>			
No. 2. Beam, to the anterior point of the palm ..	21 $\frac{1}{2}$	Bifurcate.	
Brow tine, or antler ..	6 $\frac{1}{2}$	Beam .....	10 $\frac{1}{2}$
Bis tine, or antler ....	5 $\frac{1}{2}$	Brow antler .....	10
No. 3. Beam, to the anterior point of the palm ..	22	Bifurcate.	
Brow tine, or antler ..	6 $\frac{1}{2}$	Beam .....	6
Bis tine, or antler ....	3 $\frac{6}{8}$	Brow antler .....	8
<i>Vide fig. 2.</i>			

#### *Weights of the Testes.*

<i>Side of the developed Antler.</i>		<i>Side of the defective Antler.</i>	
No. 1.	2 ounces 210 grains.	2 ounces	160 grains.
No. 2.	2 ounces 140 grains.	2 ounces	155 grains.
No. 3.	2 ounces 128 grains.	2 ounces	138 grains.

\* I must here offer to Cole my thanks for the intelligent care with which he fulfilled the directions, and for the interest he took, and is still taking, in assisting me in these inquiries.



The spermatozoa of each exhibited, when magnified 250 diameters, perfect similarity and full and healthy development.

*Weights of the Kidneys.*

Side of the *developed Antler.*

- No. 1. 4 ounces.  
No. 2. 4 ounces 30 grains.  
No. 3. 4 ounces 63 grains.

Side of the *defective Antler.*

- 4 ounces 65 grains.  
4 ounces 10 grains.  
4 ounces 32 grains.

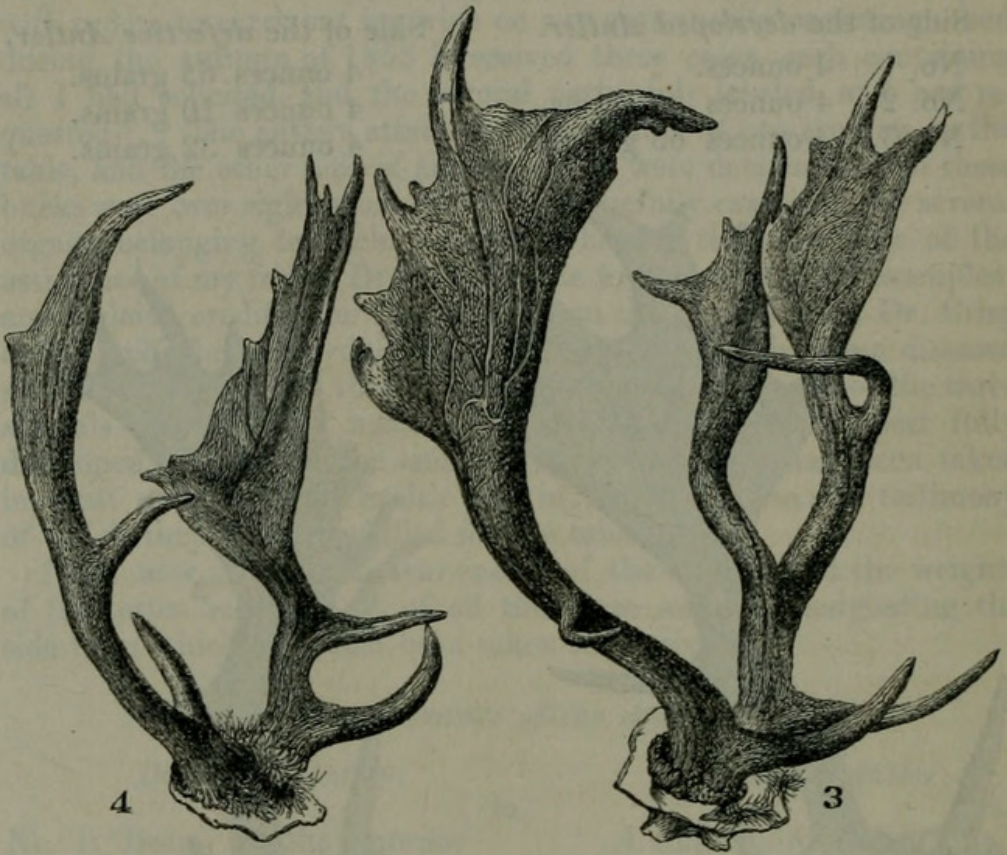


Such a similarity of results, from the investigation of *two* bucks only, might have occurred as a mere coincidence; but a *third*, when all had been selected for another purpose, having no reference whatever to this inquiry, and having been taken consecutively, will establish, I think, the fact, *that defective growth of one antler only, in the same buck, is not caused by an unhealthy state of kidney, of testicle, nor of any other organ, nor ailment of the animal.* That a defective horn and a diseased organ may be coexistent, and even on the same side, there can be no question; but that would be a mere casualty, a “non sequitur.” Arriving at this obvious conclusion, I declined imposing further on the kindness I had received, and the trouble I had given, by requiring other examples of the sort for investigation.

I have, however, placed on the table three other pairs of antlers attached to their respective skulls, in which the disparity of each antler with its fellow (*vide* figs. 3 & 4) is scarcely less remarkable than those I have just described; and the bucks which produced them were in every respect in equally perfect health and excellent condition, and were, in consequence, chosen for the Royal larder.



I could place before the Society parallel instances without end, but I have considered it unnecessary to offer more.



There can be no doubt that the growth of *both* antlers may be simultaneously impeded, by a state of general ill-health of an animal, from whatever cause it may have arisen, a diseased organ, or other ailment; it remains to be accounted for, how *one horn only* should so frequently be affected in animals possessing perfect constitutional health. No one, I imagine, can have observed the herds of deer in parks, without noticing always several among each, having one more or less incomplete antler, and sometimes both; and if these were caused by any disease, the circumstance would indicate an unwholesome condition of the stocks of all parks in the kingdom. From the conversations and correspondence I have had with most experienced park-keepers, and others well versed in knowledge of deer, and from my own observations, I have no doubt that the occurrence is almost invariably from external injury to the horn itself during the time of its formation, or to the hairy vascular integument, or "velvet," by which it is invested during that period. An instance illustrative of this opinion I witnessed in our Gardens some two years ago. An Axis Deer (*Cervus Axis*), whose antlers were about half produced, was required to be caught, and in making resistance, it sprang up, and being in a small pen, struck one horn against the roof, by which it was fractured, about three inches from its extremity, without rupturing or injuring the velvet covering; and the brow-



antler, at the same time, had a considerable portion of the integument forced off, so that it bled profusely, and I stopped the hæmorrhage by tying the part with twine. The fractured part swelled, and although not displaced from its natural position, it did not reunite, and in ten days separated; and in about the same period the portion beyond the ligature became dead and also fell off, or more probably they were rubbed off instinctively by the animal;—from neither of these points did any increase of growth afterwards occur. Thus the fracture of the horn in the one instance, and the destruction of the “velvet” in the other, equally incapacitated Nature to repair the injury, or to continue the growth. I may observe that the horns of the *Cervidæ* during their formation are to a certain degree flexible, and may be broken as short and as easily as a raw carrot. Accidents similar in result to those I have now described, from the pugnacious disposition of bucks towards each other, are frequently occurring; and although, during the time of the production of the horns, they will not use them either for attack or defence, they are not the more peacefully disposed on that account; but their attacks and defence are then carried on by their teeth, or by the employment of their sharp, wedge-shaped hoofs; striking sometimes with one, or by rearing the body, greater force is given and both are brought into action;—and the head being the part usually aimed at, the soft horns are liable to be fractured, or the investing vascular integument to be torn; in the former case it never again unites, and the extreme part falls; and in the latter it may be such as to destroy the capability of further production, and that especially if the injury be at the points of the growing antler. Of the power and precision with which the *Cervidæ* are able to strike with their hoofs, Gilbert White relates a remarkable example in a hind, which, to protect its fawn from an approaching lurcher, “rushed out of the brake, and taking a vast spring with all her feet close together, pitched on the neck of the dog and broke it short in two.” That the popular error I have endeavoured to refute should have arisen cannot be surprising, when we reflect how common was the custom, in the “olden time,” to emasculate bucks to become “hevers,” or “heaviers,” that the board of the epicure might teem with “good fat venison” all the year through; and the modes too, or rather degrees of completeness, and the age of the animals when the operation may be performed, being followed by different, and by almost uniform results in each instance, were so likely to impress on the minds of those witnessing them a notion of some marvellous relation of the horns with the testes.

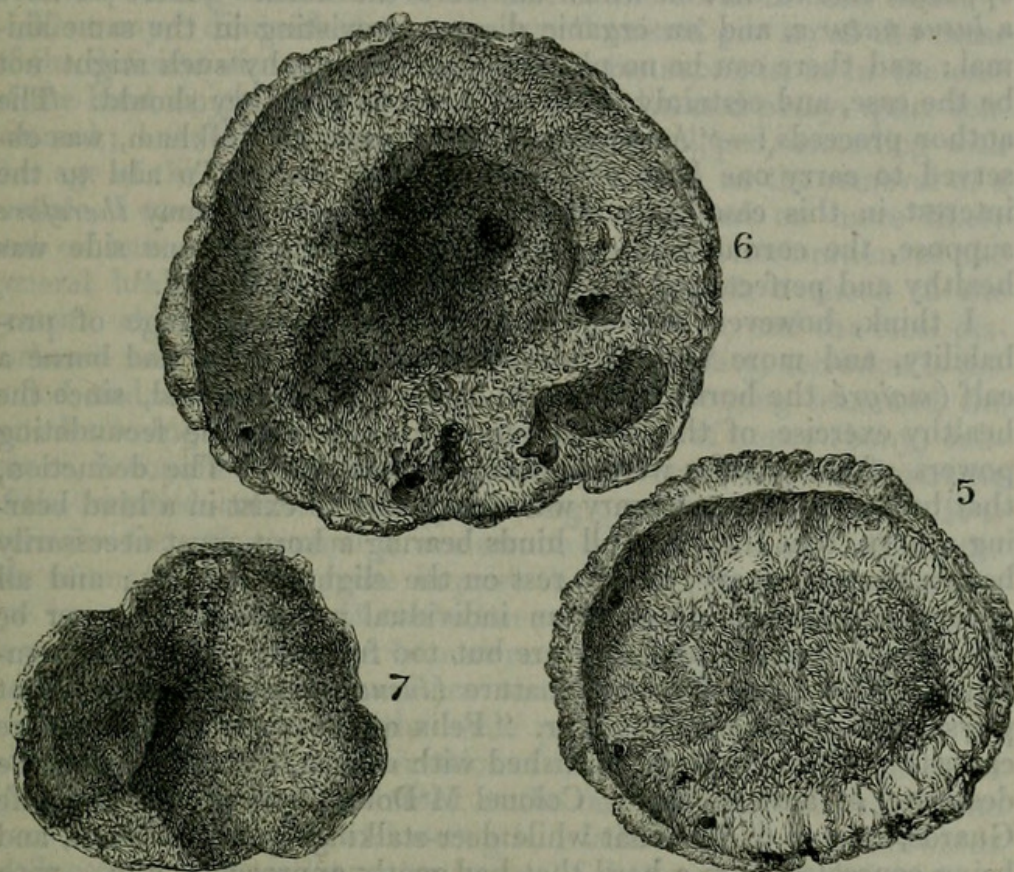
I will conclude this paper by cursorily stating the effects of perfect and imperfect castration at different ages of the animals. Sir Philip de Grey Egerton, Bart., informed me by letter that, “In order to test the accuracy of a vulgar notion, that a relation subsisted between the testicle and the horn, and that an injury to one of the former caused a corresponding deficiency in one of the latter, I had two buck fawns deprived, one of the right, the other of the left testicle. The result was that they nevertheless put up horns, and, as far as I could



judge, without any discrepancy between the right and the left horns." Fawns, when cut prior to the formation of any horn, that is within a week or so after birth, both testes being *wholly* removed, with a portion of the cord (vas deferens) also, will never bear horns, however long they may live; but if the bodies of the testes only be taken away, the "knob" (epididymis) being left attached to the cord, the animal will have horns, and renew them annually; the shedding being always rather later in the season, and the velvet covering remaining for a somewhat longer period on their surface than with the entire buck; and further, they will be more slender in the beam, and more porous in their internal structure. These semi-castrated, if I may so style them, animals will go into rut, but not to the degree which produces emaciation; nor does the great thickening of the neck occur, which is so characteristic in the perfect animal during that peculiar season; nor are they capable of procreation. When the adult buck is castrated, the horns are shed shortly afterwards, and renewed; but the persistent periosteum, or "velvet," never separates from their surface, and the horns do not again fall, but remain attached during any period the animal may survive. These permanent antlers are often more developed than those produced by entire bucks of equivalent age, which I think may be well accounted for from the fattened state, and the longer influence from the continued adherence of the vascular integument by which the horns are formed. I may here observe, that circulation continues in the bone or horn after the periosteum has separated, and that, diminishing by degrees, first from the points, the vessels become obliterated, and vitality therefore ceasing, it is cast off. Redi, in his 'Experimenta Naturalia,' on the castration of deer, says, "Si cervus juvenis castretur, nondum emissis cornubus, cornua nunquam emittit; si castretur jam emissis cornubus, cornua nunquam mutat; sed quæ dum castretur habet, castratus semper retinet. Et hac in re verior est Aristotelis, Plinii, et Solini, quam Oppiani sententia, libro secundo, de venatione versu." (1675, 12mo. p. 162.) Redi is right enough in his first proposition, but, with his ancient authorities, sadly out in the two latter. Nature seems to employ different modes to cause the shedding of the antlers in the entire and in the gelded buck (I am alluding principally to the Fallow and to the Red Deer); the former being by secretion, the latter by absorption mainly. In the perfect animal the base of the horn is separated from its circular adhesion by a secretion from the conjoined surface of the cranium of a thin brownish fluid, which will even exude below the burr; and which is, in fact, the humid incipient process set up to form the succeeding antler; and the former bony union being thus detached, the horn falls. In the *castrati* the horn is divided from its attachment by absorption of the base of the antler, sometimes only horizontally (*vide* fig. 5), at others forming a concavity, or even a deep and irregular excavation (fig. 6); and occasionally the burr will be partially and sometimes entirely absorbed before the antler is shed (fig. 7). The rapidity of this process is the more remarkable after castration of adult bucks, it being in proportion as the operation is



performed nearer the natural time of detachment of the semi-dead bone; thus, if it be about the end of March or so, the horns are cast in a fortnight; but if done shortly after the "velvet" has separated from the newly perfected antlers, in the month of September or thereabouts, they are shed in a month afterwards. Specimens of these absorptions, and also examples of the bases of the horns shed by the entire animal, are here for the examination of the Society\*.



I have purposely avoided citing authors, and have sought to relate facts only; my sole object in pursuing the inquiry I have detailed, being to endeavour thereby to expose the fallacy of some of the traditional vulgar errors respecting deer, and especially that of laterality, whether the influence be inferred to be exercised from the one side or the other, which have been handed down from, and are only worthy of, the remote ages whence they emanated.

P.S.—Within a few days, and since my having written the foregoing, a paper has been published in the 'Proceedings of the Linnean Society,' "On the influence of the Sexual Organs in modifying External Character," by my friend Mr. Yarrell, from whom I am extremely sorry to be obliged to differ as to some of the conclusions he has

\* Figures 5, 6 and 7 are from specimens, Nos.

"3558. Shed antler of a Fallow Deer, from which half of each testicle had been removed soon after birth,

3563. Shed antler of a castrated Fallow Deer,

3565. Shed antler of a castrated Fallow Deer,"

in the Museum of the College of Surgeons.



drawn from circumstances he has related, but which, nevertheless, I must not allow to pass unnoticed as they bear upon the immediate object of my paper. The author states, that "a red hind in the forest of the Duke of Gordon was observed to carry a single horn on one side of her head,—such a horn as the male red deer bears in his third year." She was shot. "And on internal examination by two competent persons, she was found to have a scirrhus ovary on the opposite side to that on which she bore the horn." Here we have a *lusus naturæ*, and an organic disease, coexisting in the same animal; and there can be no physiological reason why such might not be the case, and certainly there can be none that they should. The author proceeds:—"A red hind, in the park at Holkham, was observed to carry one horn of some length. . . . To add to the interest in this case, this hind dropped a calf; we may *therefore* suppose, the cornua and ovaries being double, that one side was healthy and perfect, and the other side probably diseased."

I think, however, it would be more within the range of probability, and more natural, to suppose, as this hind had borne a calf (*malgré* the horn), that both her ovaries were sound, since the healthy exercise of the sexual functions, and also the fecundating powers of the ovaries were perfectly undisturbed. The deduction, that because a diseased ovary was *once* found to exist in a hind bearing a horn, that therefore all hinds bearing a horn must necessarily have a diseased ovary, cannot rest on the slightest validity; and all general conclusions, drawn from individual instances, must ever be the causes of error; and they are but too frequently errors in themselves. There are freaks of nature (*lusus naturæ*) which cannot physiologically be accounted for. "Felix qui potuit rerum cognoscere causas." Hinds may be furnished with a horn, and entire stags be destitute of antlers, &c.\* Colonel M'Doual, late of the 2nd Life Guards, related to me, that while deer-stalking on his grounds, and being concealed from a herd that had gently approached him,—with hinds only, as he believed,—within range of his rifle, his keeper urged him to shoot one among them which was larger than the rest. He would not, however, do so, and when too late, he was assured that the animal had been long known to the keepers as a polled stag; of which he too was presently satisfied, by observing him advance towards some other stags, attack them, and drive them to some distance, and then return to herd again with the hinds. The author relates also a similar experiment, excepting the difference of age, to that given in a former part of this paper, of the removal of a testis from each of two bucks, *Cervus Dama* (four years old), the one from the left, the other from the right side; and observes: "Neither

\* The human hands are sometimes bestrewed with warts; the human frame totally denuded of hair, pubescent and other; and the hair becomes more or less suddenly perfectly white; but no diminution of wonted health, moral, physical, or sexual, precedes, accompanies or follows these states; although often during future existence, not a vestige of the pilous covering recurs, nor is the colour of the hair restored. Two instances of such albinism have occurred in our gardens in Barbary Mice (*Mus Barbarus*, Linn.), where one may still be seen.



of these bucks cast either horn, nor was any lateral influence observable. They shed their horns as usual in the following spring, the new horns coming in due course; but in the autumn, when the horns had ceased to grow, and [had] become hard, all four horns were those of the third year, and not those of the fifth year: no lateral influence was observable, but it was *plainly shown that the diminished sexual power*, consequent upon the operation, had produced a corresponding diminution in the size of the horns in both cases."

That any "diminished sexual power" existed *per se*, as the cause of the deficient size of the horns in these instances, is, as in the case of the hind which dropped a calf having a diseased ovary, quite conjectural; but the horns not being fully developed, according with the age of the animals, after such an operation as the removal of a testicle, I conceive may be satisfactorily explained on more likely and on reasonable grounds, viz. the consequent deterioration of the general health which ordinarily would follow such a shock to the system, which in the adult animal is often severe, and the local disturbance very great. During ill-health and debility, secretion is impeded and absorption increased, the body becoming lean and the muscles losing their volume, and the secretion of horny (bony) substance, in common with that of all other solid secretions, would partake of the lessened action of the producing quality of the blood. It is from few facts that sexual power can be estimated; and I believe the loss of one testicle no more impairs that power than the loss of one eye impairs the vision of the other;—of course I speak of animals in perfect health. In the human race I know two examples, where marriage, after extirpation of one testis, was followed by a fine, and a resembling progeny to the male parent. It is much to be regretted that the further observation of these two bucks was prevented by the sale of the Society's stock at the farm at Kingston, as, on the recovery of their health and strength, I believe the horns afterwards produced would have borne testimony of the increase of their age.

### 3. DESCRIPTION OF NEW SPECIES OF SHELLS COLLECTED BY MR. T. BRIDGES IN THE BAY OF PANAMA AND ITS VICINITY, IN THE COLLECTION OF HUGH CUMING, ESQ. BY PHILIP P. CARPENTER.

*Note.*—Mr. Cuming, knowing that I am now engaged in working out the shells of the West Coast of North America for a Report at the forthcoming meeting of the British Association, has most kindly sent me all the shells lately collected by Mr. Bridges which he regards as new, with a request that I should describe them for him; at the same time enclosing the published species which he regarded as being the most allied forms. I trust to his well-known accuracy for the fact of their not being as yet described. Unfortunately many of the specimens had gone through the acid process, which has destroyed much of the microscopic markings which often furnish the best guide for the discrimination of species.

Warrington, June 9th, 1856.



1. *STRIGILLA DISJUNCTA*, n. s. *S. testa satis magna, alba, tenui, planata; inæquilaterali, postice producta; marginibus dorsalibus subrectis, ad angulam 120°, aliis bene arcuatis; lineis incrementi vix monstrantibus; lineis undulatis exillimis, antice concentricis, umbones versus ascendentibus, sinu angustiore; dein ad marginem ventralem rapide descendentibus; dein subito, angulo acuto, circiter 20° postice rursus ascendentibus; lineis angularum in valva utraque haud convenientibus; margine postico sinuato, sculptura postea fortiore; margine antico quoque sinuato; lunula distincta, sinuata; ligamento subelongato; dent. card. valva altera uno parvo et uno magno bifido; altera uno parvo bifido; dent. lat. acutioribus, haud distantibus.*

Long. 1.35, lat. 1.54, alt. .54 poll.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. (Mus. Cuming. sp. duo.)

Allied to *S. sincera*, Hanl.; remarkable for its large size and very fine markings, and named from the lines of markings in the two valves not agreeing at the edges.

2. *TELLINA DESHAYESII*, n. s. *T. testa "T. exili" simili, sed multo magis inæquilaterali; ligamento solido; postice vix rostrata.*

Long. .56, lat. .9, alt. .26 poll.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

3. ? *SCROBICULARIA VIRIDO-TINCTA*, n. s. ? *S. testa "? S. productæ" simili; sed latiore, ovali, tenuiore, magis planata, antice haud producta, alba; umbonibus viridi tinctis.*

Long. 1.42, lat. 2.05, alt. .65 poll.

*Hab.* In Sinu Panamensi, una cum ? *S. producta*; legit *T. Bridges*. Sp. un. in Mus. Cuming.

Another of the species intermediate between *Tellina* and *Scrobicularia* proper, and apparently nearer to the former genus.

4. *SEMELE PLANATA*, n. s. *S. testa subtriangulari, margine ventrali valde excurvato; cinereo-albida, circa lunulam minimam et aream ligamenti roseo eleganter penicillata, intus flavido tincta; rugis concentricis subdistantibus, irregularibus, parum elevatis; striulis creberrimis radiantibus, valde irregularibus, rugulosis sculpta; postice maxime sinuata; valva una magis quam altera planata; fossa ligamenti recta, angusta; sinu pallii modico, lato.*

Long. 1.4, lat. 1.56, alt. .47 poll.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

Differs from *S. punctata*, Sow., in the absence of punctures, in the triangular dorsal margins, unequal flattening of the valves, straight narrow hinge-pit, and the much smaller size of the pallial sinus.



5. *MACTRA* (*MACTRELLA*) *LACINATA*, n. s. *M. testa parva, tenuissima, cinerea, ventricosa; postice angulata, carina modica, fimbriata; leviori, concentrice vix undulata, rugulis epidermidis tenuis subdistantibus ornata; subæquilaterali, umbonibus prominentibus; dent. card. parvis, lat. acutis, haud distantibus; sinu pallii parvo, subangulato.*

Long. .56, lat. .69, alt. .4 poll.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Mus. Cuming, sp. tria.

Has a general similarity to *M. angulata* and kindred species. Remarkable for the epidermal fringe on the keel and regular concentric wrinkles.

6. *CYCLINA PRODUCTA*, n. s. *C. testa tenui, ventricosiore, alba, ventraliter producta; concentrice tenuissime striata; marginibus subregulariter arcuatis; umbonibus eleganter incurvatis; lunula nulla, linea cordiformi vix monstrante; area ligamenti elongata; dent. card. valva altera postico bifido, anticis ii., contiguis; altera posticis ii. acutis, elongatis, antico acuto; sinu pallii subangulato, umbones versus fere dimidium ascendente.*

Long. 1.62, lat. 1.58, alt. 1.05 poll.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

In shape something like *Cyrena maritima*, C. B. Ad., but in habit resembling *Cyclina subquadrata*, Hanl. (= *Artemis saccata*, Gould).

7. *MELAMPUS BRIDGESII*, n. s. *M. testa parva, ovali, nigro-fusca, nitida; anfr. viii., sutura haud impressa, in spiram tenue spiraliter striulata; marginibus spiræ regulariter excurvatis; apertura pyriformi, labro acuto, nec calloso nec dentato; columella triplicata; plicis, antica spirali, obliqua; media acuta, transversa, subparietali; postica parietali, parva.*

Long. .28, long. spir. .08, lat. .12 poll., div. utraque parte variante.

*Hab.* Ad ora Sinus Panamensis; legit *T. Bridges*. Sp. tria in Mus. Cuming.

Has the general appearance of *M. Adamsianus*, Pfr., from N. Ireland, but is much more slender, with a simple labrum.

8. *UMBRELLA OVALIS*, n. s. *U. testa "U. Indicæ" simili; sed margine haud undulato, regulariter ovali; apice spirali, subprominente, minus inæquilaterali; epidermide tenui, haud nitente; adulta intus aurantia.*

Test. jun. long. 1.93, lat. 1.58 poll.

*Hab.* Ad ostia fluminis Chiriqui, in Sinu Panamensi; legit *T. Bridges*. Sp. duo in Mus. Cuming.

Concerning this remarkable shell, hitherto only found in the old world, and, in spite of the bulk of its animal, not observed by either Mr. Cuming, Prof. Adams, or Mr. Hinds, Mr. Cuming writes that

B.M.  
Type C

B.M.  
Type Col



it was not only brought by Mr. Bridges, but also by a gentleman in Paris, who collected it exactly in the same place. Two specimens are in Mr. Cuming's collection, of which one, very much thickened, appears to have formed part of a much larger shell.

9. *PYRGULA QUADRICOSTATA*, n. s. *P. testa ovali, alba, spira haud acuminata, marginibus excurvatis; carinis iv. acutis cincta, quarum ii. in spira extant, tertia vix supra suturam impressam apparet, quarta circa basin; aperturam versus, costulis incrementi decussata; apertura lata; labro tenui a plica quarta parietali interrupta.*

Long. .28, long. spir. .16, lat. .15, div.  $40^{\circ}$ .

*Hab.* In ? flumina Sinus Panamensis; legit *T. Bridges*. Sp. un. in Mus. Cuming.

This pretty little shell is the Pacific analogue of the Swiss species for which the genus was constituted; differing, however, in form and number of keels. The specimen has been tenanted by a hermit crab, and has Bryozoa near the mouth.

10. *ERATO ? MAUGERIÆ*, var. *PANAMENSIS*. *E. testa "E. Maugeriae" simillima, sed majore, vix graciliore, apice minore, spira plerumque extantior.*

Long. .28, long. spir. .03, lat. .18, div.  $130^{\circ}$ .

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. tria in Mus. Cuming.

The differences are so very trifling between the specimens examined from the Pacific and West Indies as not to justify (without further knowledge) a specific separation. They do not appear constant in either type. The first whorl in the Pacific shells is somewhat smaller, while the shell is larger.

11. ? *CITHARA SINUATA*, n. s. *C. testa trapezoidea, spira sub-elevata, marginibus excurvatis; albida, rufo-fusco varie tincta; anfr. ix., subrotundatis, sutura parum impressa, quarum iii. nucleosi, diaphani, læves, dein liris spiralibus et radiantibus fortiter cancellatis; normaliter lirulis radiantibus et striulis spiralibus tenue sculptis, in anfr. ult. subobsoletis; apertura lineata, canali anteriore haud profundo, curtissimo; labro acuto, ad dorsum calloso, sinu antico parvo, postico angusto, profundo, intus haud denticulato; labio parietali haud calloso.*

Long. .43, long. spir. .18, lat. .17, div.  $43^{\circ}$ .

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. tria in Mus. Cuming.

Closely related to *Pleurotoma concinna*, C. B. Adams, Pan. Shells, No. 167, from the description of which it differs in the whorls not being angular, and the sculpture on the spire being coarser, instead of finer, than the rest.

12. *MANGELIA ACUTICOSTATA*, n. s. *M. testa parva, turrata, albida, rufo-fusco tincta; marginibus spiræ excurvatis; anfr. vii. subtumentibus, superne obtuse angulatis, sutura impressa;*



*costis radiantibus acutis, angustis, circiter ix. subobliquis; interstitiis latis, confertissime et minutissime spiraliter striulatis; apertura subelongata; labro acuto, simplici, sinu rotundato, aperto; ad dorsum varice acuto, extante; labro tenui.*

Long. .32, long. spir. .16, lat. .12, div. 30°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

Intermediate between *M. rigida*, Hinds, and *M. striosa*, C. B. Adams.

✓ 13. *MANGELIA* ? *RIGIDA*, var. *FUSCOLIGATA*. *M. testa* "*M. rigidæ*" *simili; sed graciliore, costis acutioribus, lineis spiralibus minus expressis, fascia rufo-fusca super suturam plus minusve conspicua.*

Long. .27, long. spir. .15, lat. .08, div. 28°.

*Variat t. plus minusve elevata, seu latiore.*

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Mus. Cuming.

As far as can be judged from a comparison of nine specimens brought by Mr. Bridges with two of *M. rigida*, Hinds, this is a very variable species, differing in colour, strength of sculpture, solidity, or spiral elevation. *M. neglecta*, C. B. Ad., four specimens of which were found to vary, may also prove a brown variety of the same species.

✓ 14. *DEFRANCIA INTERCALARIS*, n. s. *D. testa graciliore, pallide castanea, fascia circa peripheriam pallidiore, spira elevata, marginibus rectis; anfr. x. rotundatis, suturis parum impressis; costis radiantibus supra circiter xi. rotundatis, interstitiis latis; infra aliis intercalantibus; lirulis spiralibus, subdistantibus, in spira plerumque iii., ad basin crebrioribus; rugulis radiantibus minutissimis tota superficie sub lente confertissime ornata; apertura ovali, canali brevi; labro margine acuto, vix serrato, intus denticulato, ad dorsum varice prominente, laterally compresso; sinu postico rotundato, aperto, sutura vix attingente, callositate parietali parva.*

Long. .64, long. spir. .35, lat. .24, div. 25°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

With some of the characters of *Drillia*, and a loose resemblance to *Pleurotoma gracillima*, this shell seems to have most affinity with *Defrancia rava*, Hinds.

✓ 15. *DEFRANCIA SERRATA*, n. s. *D. testa parva, turrita, marginibus spiræ excurvatis; albida, rufo-fusco fasciata; fascia aream sinus implente, dein circa basin continua; anfr. viii. convexis, costis rotundatis xii., circa basin obsoletis, et lirulis spiralibus costarum apices serrantibus, iii. in spiram monstrantibus, eleganter instructis; apertura subquadrata; labro ad marginem serrato, intus tuberculis v., ad dorsum varice valde prominente, ornato; sinu rotundato, lato; labio subrugoso.*

Long. .3, long. spir. .18, lat. .12, div. 28°.



*Hab.* In Sinu Panamensi; legit T. Bridges. Sp. un. in Mus. Cuming.

Has the general aspect of *Mangelia rigida*, var. *fuscoligata*; and also resembles *D. rava*, Hinds.

16. *DRILLIA PUNCTATOSTRIATA*, n. s. *D. testa intense purpureo-fusca, gracili, spira acuminata, marginibus excurvatis; anfr. x. satis rotundatis, suturis haud impressis; lirulis spiralibus acutis, distantibus, quarum iii.—v. in spira monstrantur, supra costis radiantibus inconspicuis circiter xx. obliquis, nodosis; juxta suturam carina haud extante; area sinus lineis incrementi costis convenientibus vix decussata; apertura elongata, intus haud denticulata, canali minimo; labro margine acuto, haud serrato, ad dorsum tumente; sinu antico minore, postico rotundato, profundo, faucibus coarctatis; labio haud calloso; tota superficie sub lente minutissime et confertim punctato-striata.*

Long. .75, long. spir. .4, lat. .26, div. 27°.

*Hab.* In Sinu Panamensi; legit T. Bridges. Sp. un. in Mus. Cuming.

17. ? *PLEUROTOMA GRACILLIMA*, n. s. ? *P. testa gracillima, pallide castanea, spira acuta, elevata, marginibus rectis; anfr. xii. rotundatis, sutura impressa; costibus radiantibus subdeclivibus xviii., ad jugum acutis, interstitiis parvis; lirulis spiralibus acutis, quarum iii. sive iv. in spiram monstrantur, ad intersectiones nodulosas; carina infrasuturali haud extante; area sinus latiore, sublævi; tota superficie minutissime spiraliter striulata, in spira radiatim corrugulata; apertura ovali, canali subelongato; labro margine acuto, vix serrato, ad dorsum valde calloso; sinu antico parvo, postico rotundato, aperto, suturæ contiguo, haud attingente; callositate parietali vix monstrante.*

Long. .83, long. spir. .49, lat. .24, div. 20°.

*Hab.* In Sinu Panamensi; legit T. Bridges. Sp. unicum in Mus. Cuming.

Has many of the characters of *Drillia* and *Defrancia*; but the canal appears long enough to give it a place among the true *Pleurotomæ*.

18. *SCALARIA REGULARIS*, n. s. *S. testa parva, turrita, alba; anfr. ix. parum attingentibus; costis x.—xii. validioribus, extantibus, lineis subspiralibus apicem versus continuis; striulis spiralibus subobsoletis; umbilico nullo.*

Long. .27, long. spir. .19, lat. .13, div. 32°.

*Hab.* In Sinu Panamensi; legit T. Bridges. Sp. tria in Mus. Cuming.

The ribs are stronger, more projecting, and the spiral sculpture fainter than in *S. Mindorensis*.

19. *SCALARIA TIARA*, n. s. *S. testa obesa, lævi, albida; anfr. vii. parum attingentibus, rapide augentibus; costis xii. acutis,*



*valde extantibus, infra suturam parum alatis, attingentibus, lineis rectis ad apicem continuis; umbilico nullo.*

Long. .27, long. spir. .16, lat. .16, div. 48°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

Distinguished from *S. obesa*, Sow., by the small size of the corresponding whorls, slightly winged shoulders, and want of umbilicus.

20. *SCALARIA SUBNODOSA*, n. s. *S. testa turrita, alba, gracili, laevi, anfr. xii. haud separatis; costis xiv.-xvi. plerumque acutis, huc et illuc latis, subdeclivibus, superne vix alatis; umbilico nullo.*

Long. 1.4, long. spir. 1.06, lat. .5, div. 23°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

21. *SCALARIA CUMINGII*, n. s. *S. testa "S. mitraeformi" simili, sed paullum graciliore; anfr. x. quarum iii. primi laeves; costis paucioribus, viii.-ix., minus coronatis, haud acutissimis, haud reflexis, striulis incrementi minutissime sculptis; anfr. valde separatis.* B.M.T.

Long. .35, long. spir. .25, lat. .14, div. 30°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

The lines of growth on the varices show that the coronations were never so sharp and elevated as in *S. mitraeformis*.

22. *SCALARIA HINDSII*, n. s. *S. testa "S. Cumingii" simili, sed magis elongata, majore, anfr. x. haud profunde separatis; varicibus acutis viii., acutius coronatis, lineis regularibus, ad marginem alteram spirae parallelis, ascendentibus.* B.M.T.

Long. 1.04, long. spir. .79, lat. .4, div. 25°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming\*.

23. *NATICA EXCAVATA*, n. s. *N. testa "N. Broderipianæ" simili; sed callositate parietali maxime elongata; regione spirali umbilicari valde excavata; albida, rufo-castanea lineis irregularibus radiantibus penicillata; striulis radiantibus crebrioribus.*

Long. 1.45, long. spir. .3, lat. 1.5, div. 130°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. 2 sp. in Mus. Cuming.—S.W. Mexico, P. P. C.

This shell resembles *N. lineata* (Philippines) in colouring; but that shell is smooth, while the Panama shell has distinct, though not deep, radiating furrows, ending in a circum-umbilical line.

24. ? *TRITON CREBRISTRIATUS*, n. s. ? *T. testa "T. picto"*

\* The above species are published with doubt, as *Scalariæ* are seldom seen in sufficient numbers to ascertain the limits of specific variation. Species described from one or two specimens must always be regarded simply as "provisionally registered."



*plerumque simulante; sed striis crebris spiralibus cincta; albida, rufo-castaneo dense maculata; apertura vix varicosa, intus simplici.*

Long. .58, long. spir. .34, lat. .24, div. 30°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

Is destitute of the expressed spiral ribs of *T. pictus* (s. g. *Epidromus*, H. & A. Ad. Gen. i. 103). The only specimen seen has no teeth in the aperture. It may be only on the verge of maturity, or it may belong to a Buccinoid genus.

25. *PHOS BIPLICATUS*, n. s. *Ph. testa subelevata, anfr. viii. parum rotundatis; costis radiantibus circiter xi. rotundatis, interstitiis concavis; liris spiralibus extantibus acutis, supra costas castaneo tinctis, quarum iv. in anfr. penult. videntur; apertura contracta; labro intus dense lirato, labio interdum rugoso; columella plica acuta, canalem definiente, altera obtusa, vix bifida, superante; canali acuto, recurvato, ad dorsum nodoso et infra carina acuta ornato; colore albido, purpureo-fusco tincto.*

Long. 1.05, long. spir. .6, lat. .64, div. 50°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

26. *LATYRUS TUMENS*, n. s. *L. testa "L. gracili" simillima, sed costis maxime tumentibus, attingentibus, sulcis spiralibus crebris ornata; plicis columellaribus iii. quarta obsoleta.*

Long. 2.78, long. spir. 1.57, lat. 1.44, div. 50°.

*Hab.* In Sinu Panamensi; legit *T. Bridges*. Sp. un. in Mus. Cuming.

In *L. gracilis* the spiral lines are few and raised; in this species numerous and impressed.

#### 4. DESCRIPTION OF NEW SPECIES AND VARIETIES OF CALYPTRÆIDÆ, TROCHIDÆ, AND PYRAMIDELLIDÆ, PRINCIPALLY IN THE COLLECTION OF HUGH CUMING, ESQ. BY PHILIP P. CARPENTER\*.

1. *CRUCIBULUM VIOLASCENS?*, n. s. *Cr. t. solidiore, conica, albida, fusco maculata, intus violascente; vertice nucleoso conspicuo, adunco, anfr. ii. subtumentibus, apice planato; superficie rugis*

\* Mr. Cuming, having most obligingly lent me (for comparison with Mazatlan species) his type-specimens of various genera that cannot well be identified merely by descriptions, has asked me at the same time to describe certain forms which appeared to have escaped the notice of previous writers. Of the group here named *Chrysallida*, the Vitrinelloid forms allied to *Cyclostrema*, and the West American species of *Calyptræidæ*, details will be found in the Catalogue of the British Museum Collection of Mazatlan Shells, now in the press.



*plurimis parum irregularibus instructa, haud magnis, rotundatis, marginem huc et illuc pectinante; interstitiis variantibus.*

Long. .94, lat. .78, alt. .48 poll.

*Hab.* Ceylon; legit Capt. Templeman. Sp. unic. in Mus. Cuming.

*Comp.* *Calyphæa maculata*, Quoy (non Brod.), Lam. An. s. Vert. ed. Desh. p. 628.

The cup is unfortunately broken in the solitary specimen; but the attachment continues for  $\frac{2}{3}$  rds of the height of the shell, with a very strong muscular scar at its side. It is distinguished by the close rounded ribs of the exterior and the rich violet of the inner surface.

2. *CRUCIBULUM SPINOSUM*, var. *COMPRESSO-CONICUM*. *Cr. spinosum abnormale, testa valde irregulari, conica, apicem aduncum versus lateraliter compressa, postea tumente; superficie haud spinosa, albo-fusca, fusca varie maculata.*

Long. .9, lat. .95, alt. .75 poll.

*Div.* apicem versus, longitudinaliter 90°, transversim 40°; postea 100°; in adulta 15°.

*Hab.* California. In Mus. Cuming.

This most abnormal specimen by itself would never be taken for *Cr. spinosum*; nevertheless the intermediate forms in the British Museum Mazatlan Collection, between this and the flat and spiny states, are so gradual and numerous, that I feel compelled to affiliate it to that most variable species.

3. *CRUCIBULUM* ?? *IMBRICATUM*, var. *CUMINGII*. *Cr. t. conica, tenui, albo-fusca, rubro-fusco varie maculata seu lineata; vertice . . . . ?, satis adunco; costis numerosis, sæpe intercalantibus, usque ad xl., haud valde expressis, haud acutis, interstitiis tenue corrugatis; margine acuto, sæpe a costis palmato; cyatho albo, per duos trientes affixo, ad marginem interiorem subplanato.*

Long. 1.95, lat. 1.7, alt. 1.05 poll.

*Hab.* In Sinu Callaoensi, ad Peruviam; idem, Valparaiso. Mus. Cuming.

The shell differs from the non-pitted forms of *Cr. imbricatum*, Sow. (described as *C. dentatum* by Mke), in being very much thinner, with the ribs much finer and more numerous. The cup also is not fixed quite so far.

4. *CR. ? CUMINGII*, var. *CARIBBEENSE*. *Testa tenuissima, superficie ?haud corrugata, cyatho fusco tincto.*

Long. 1.1, lat. .95, alt. .5.

*Hab.* In insula "St. Thomas" dicta, in Mari Caribbeensi. Mus. Cuming.

A beautiful young specimen, in the Cumingian collection, differs from the Pacific form (1) in being thinner, which may be a peculiarity of growth; (2) in the want of corrugation of the surface, which may be the result of acid; (3) in a coloured stripe near the margin of the cup, which may be an individual idiosyncrasy.



5. *CRUCIBULUM PECTINATUM*, n. s. *Cr. t. conica, aurantia, tenuiore; vertice nucleoso subadunco, pæne separato, anfr. ii. subtumentibus, sutura profunda, apice planato; dein superficie lævi, seu striis incrementi; dein rugis radiantibus extantibus, peracutis, ad periodos incrementi laminis concentricis irregularibus interruptis, interdum valde distantibus, interdum interstitiis parvis; margine a rugis cavatis stellato; cyatho (testa ? adolescenti) haud continuo, intus indentato, marginibus ad ang. 50° distantibus.*  
 Long. 1·14, lat. ·97, alt. ·6 poll.

*Hab.* Peru. *Sp. un.* in Mus. Cuming.

This specimen is distinguished at once by its golden-orange colour, rather thin growth, and by the characters of the ribs and cup. The ribs are generally distant, always sharp, resembling a young *Siphonaria gigas*; and as the margins of growth are often left like caves, a series of irregular pits are then formed as in *Cr. imbricatum*. On one part of the shell are diagonal furrows, as in *Cr. ?imbricatum*, var. *Broderipii*; but this may be an accidental peculiarity. The shape of the cup is as in the very young state of the other species, being a simple plate bent at an angle of 50° and there fastened at the two extremities to the inner surface of the shell. Other specimens are in the British Museum collection.

6. *CRUCIBULUM AURICULATUM*, Chemn.

*Patella auriculata*, Chemn. Conch. Cab.

The Chemnitzian species is difficult to recognize. It is, however, most probably the West Indian form, answering to *Cr. umbrella*, Desh. (= *C. rudis*, Brod.). Perfect specimens are extremely rare in collections. On comparing a rather young shell in Mr. Cuming's collection (in which the finer markings have been removed in the beautifying process) with a series of *Cr. umbrella* from S.W. Mexico, I can scarcely find a single point of specific difference. The cup is attached only at the base, is white throughout, angulated in what would be the line of attachment, and indented along the inner margin. The outside has about thirty rather irregular ribs, which are neither sharp nor rounded. Colour whitish, speckled with brown. A large series from each side of the continent should be compared before the identity (or otherwise) of the species is decided. The comparative number and sharpness of the ribs are the principal points of difference. The colour varies greatly in the Pacific shells.

7. *CRUCIBULUM ? IMBRICATUM*, var. *BRODERIPII*.

= *Cr. imbricatum*, Brod. in Mus. Cuming: non *C. imbricata*, Brod. in Trans. Zool. Soc. pl. 27. f. 7.

*Cr. ?imbricatum, t. albida, solida, subcompressa, conica; interstitiis costarum et laminarum incrementi interdum magnis, profundis, haud regularibus, interdum evanescentibus; superficiei parte rugis diagonalibus crebrioribus instructa.*

This shell, which has borne the name of *Cr. imbricatum* in the Cumingian collection, may not improbably be only a variety of that species; but as it offers distinctive characters in its remarkable



diagonal furrows, a name has been given to it in remembrance of the author of the Monograph in the Proceedings and Transactions of the Zoological Society. The shell figured as *Calyptrea imbricata* in the Transactions exactly accords with the young state of the ordinary thick, ribbed, and often pitted species of the W. American coast, figured by Sowerby under the same name in his 'Genera,' f. 5. An attempt to remodel the synonymy of this shell will be found in the British Museum Mazatlan Catalogue.

8. *CYCLOSTREMA EXCAVATA*, n. s. *C. t. margaritæformi, nitidior, alba; anfr. nucleosis ii., lævibus; dein anfr. uno et dimidio striulis minimis radiantibus, excurvatis; dein anfr. ii. et dimidio normalibus; tota superficie minutissime spiraliter striatis; basi regione umbilicali maxime excavata; umbilico profunde spirali, anfractus ultimi dimidio solum monstrante; apertura subrotundata.*

Long. .16, long. spir. .08, lat. .24 poll., div. 130°.

*Hab.* In Mari Sinensi. Sp. unic. in Mus. Cuming.

This shell appears glossy to the naked eye, and escapes from the fingers like a Zonites, but under the glass is beautifully sculptured. The first normal whorl appears as though engine-turned.

9. *CYCLOSTREMA OCTOLIRATA*, n. s. *C. t. parva, alba, anfr. v., quorum duo et dimidium nucleosi sunt; liris octo validis spiralibus cincta, quarum duo in spiram et una vix intus umbilicum maxime apertum sitæ sunt; sutura profunda; apertura circulari, anfr. penult. vix attingente.*

Long. .4, lat. .6, div. 155°.

*Hab.* In Mari Rubro. Sp. un. in Mus. Archer.

The umbilicus is so wide as clearly to show the junction of the apical whorls at the top. The species appears too strong, and the adult portion too large in proportion to unite with *Vitrinella*, with which it agrees in many characters.

10. ? *CYCLOSTREMA PENTAGONIOSTOMA*, n. s. ? *C. t. subdiscoidea, parva, solidior, alba; anfr. v., quorum ultimi duo normales sunt; carinis quinque cincta, una in spira, una valde prominente ad peripheriam, tuberculis obscuris undata, una in basi, duabus infra umbilicum maximum; tota superficie minutissime et creberrime transversim striata; apertura circulari, parum attingente, a carinis angulata.*

Long. .04, lat. .065—.09, div. 165°.

*Hab.* In Mari Rubro. In Mus. Brit. repertura.

Known at once from the tricarinate *Vitrinellæ* by its strong growth, the undulating periphery of the principal keel, and the very minute radiating striæ.

11. ? *VITRINELLA SPIRULOIDES*, n. s. *V. t. hyalina, diaphana, minima, tenuissima; spira planata, anfr. vix attingentibus, haud rapide augmentibus; liris acutis subdistantibus radiantibus, circiter xx. cincta; interstitiis tenuissime spiraliter striatis; peritremate continuo, circulari.*



Long. (circiter) .075, lat. .025 — .02, div.  $180^{\circ}$ .

Hab. Australia. In Mus. Brit. repertura.

This shell may be a *Cyclostrema*, but its texture agrees better with *Vitrinella*; it seems to be young, and differs from all other recorded species in the principal sculpture being transverse instead of spiral. Under the microscope, its beautiful sharp ribs remind the observer of the chambers of *Spirula*.

12. *ODOSTOMIA* (*CHRYSTALLIDA*\*) *CREBRISTRIATA*, n. s. *Chr. t. ovato-oblonga, solida, alba; vertice nucleoso parvo, declivi, in truncatione spiræ haud magna immerso; anfr. normalibus vi. planatis, suturis parum impressis; clathrulis transversis circiter xx. rectis, haud declivibus, sibi subparallelis, obtusis, circa basin rotundatam ad rimulam umbilicalem continuis, labrum adultum versus crebrioribus, tenuioribus; interstitiis latis, planatis, creberrime spiraliter striatis; apertura contracta, ad basin late effusa; plica columellari conspicua, transversa, obtusa.*

Long. .132, long. spir. .087, lat. .053 poll., div.  $23^{\circ}$ .

Hab. Sual, insula Luzon, Philippinarum. Legit H. Cuming; sp. un. in Museo suo.

This shell is probably not quite, though very nearly mature; as the parietal lip is scarcely formed, and the labrum is not so thin as usual in the adult. The aspect is quite distinct from that of the Mazatlan species.

13. *CHEMNITZIA CUMINGII*, n. s. *Ch. t. valde elongata, turrita, alba, subdiaphana, interdum fusco lineata, seu maculata; vertice nucleoso helicoideo, parum prominente, anfr. iii. verticaliter sitis, apice conspicuo, marginibus spiræ rectis haud superante; anfr. xviii. normalibus, subrotundatis, suturis distinctis; lirulis transversis circiter xxviii. acutis, subrectis, subdeclivibus, circa peripheriam truncatis; interstitiis concavis, latioribus, a sulculis spiralibus vi. decussatis, in basin crebrioribus; apertura ovata, labro tenuissimo, columella vix intorta.*

Long. .55, long. spir. .47, lat. .1 poll., div.  $13^{\circ}$ .

Hab. In Mari Sinensi. Sp. un. in Mus. Cuming.

Known at once from *C. grandis* by the spiral striæ in the concave interspaces.

14. *CHEMNITZIA POLYZONATA*, n. s. *Ch. t. haud parva, turrita, alba; vertice nucleoso tumente, helicoideo, anfr. iii. subverticaliter sitis, apice conspicuo; marginibus spiræ rectis, satis divergentibus superante; anfr. x. normalibus, satis tumentibus, suturis im-*

\* Subgenus *CHRYSTALLIDA*.

*Testa utrinque constricta, pupiformis; peritrema continuum, ad basin undatum; labrum juxta aperturam tenue, intus solidius; plica columellaris declivis, celata; superficies plerumque cancellata. Operculum (specie typica) radially corrugatum, tenuissimum.*

Sp. typ. *Chemnitzia communis*, C. B. Ad., Pan. Shells, no. 223, pp. 166, 312.

Particulars of this group will be found in the British Museum Mazatlan Catalogue, with descriptions of sixteen species from that place.



*pressis; costis transversis subexpressis, latioribus, rotundatis, in anfr. penult. xx., ad basin rotundatam continuis, postea evanidis; interstitiis minimis; lirulis planatis latis spiralibus, et costis et interstitiis superantibus, in anfr. penult. ix.; apertura vix ovata; labro acuto, ante peritrema tumente et postea contracto; columella valde intorta; regione umbilicali valde indentata.*

Long. .37, long. spir. .3, lat. .1 poll., div. 18°.

*Hab.* Cagayan, in insula Mindanao, Philippinarum. Legit H. Cuming; sp. un. in Museo suo.

15. *CHEMNITZIA BICARINATA*, n. s. *Ch. t. elongata, turrita, alba, huc et illuc varicosa; vertice? . . . ; anfr. normalibus xii. + ? . . . , planatis, suturis valde impressis; liris transversis acutis, rectis, circiter xxv., haud declivibus, lineis ad apicem vix continuis; carina valida, extante, rotundata circa peripheriam, ad suturas vix monstrante; carina altera in basin minore; tota superficie minutissime spiraliter striata; apertura a carinis angulata; columella intorta; regione umbilicali maxime indentata; varicibus intus dentatis.*

Long. .42, long. spir. .36, lat. .07 poll., div. 13°.

*Hab.* Cagayan, in insula Mindanao, Philippinarum. Legit H. Cuming; sp. un. in Museo suo.

In its remarkable base, it resembles *Ch. turrita*, C. B. Ad. (Panama).

16. *CHEMNITZIA RUBROFUSCA*, n. s. *Ch. t. rubro-fusca, elongata, turrita; vertice nucleoso discoidali, anfr. iii., apice conspicuo; parum prominente, marginibus spiræ vix rectis haud superante; anfr. normalibus ix., quarum iv. primi subrotundati minus divergentes, alteri planati; lirulis transversis rectis, acutis, crebris, xxvi., circa basin evanescentibus; lineis haud declivibus apicem versus declivibus; circa basin rotundatam, haud umbilicatam, et interstitiis lirularum concavis, sulcis minimis ornata, in anfr. penult. circiter viii.; columella vix intorta.*

Long. .27, long. spir. .204, lat. .065 poll., div. 16°.

*Hab.* In Mari Sinensi. Sp. un. in Mus. Cuming.

17. *CHEMNITZIA BITTIFORMIS*, n. s. *Ch. t. valde elongata, turrita, alba; vertice? . . . ; anfr. normalibus xii., subplanatis, suturis distinctis; lirulis transversis circiter xxx. vix expressis, latissimis, rotundatis, attingentibus, circa basin rotundatam evanescentibus; lirulis spiralibus minoribus, in spira vii., in basi crebrioribus, interstitia minima decussantibus, lirulisque transversis superantibus; apertura ovata; columella vix intorta; huc et illuc varicibus tumentibus.*

Long. .43, long. spir. .36, lat. .08 poll., div. 11°.

*Hab.* Cagayan, in insula Mindanao, Philippinarum. Legit H. Cuming; sp. un. in Museo suo.

Although the nuclear whorls have perished, the point of junction bears testimony to its sinistral character, while the general aspect of the shell is Cerithoid.



5. DESCRIPTION OF A NEW SPECIES OF ACTINIA FROM THE  
DEVONSHIRE COAST. BY E. W. H. HOLDSWORTH.

When contracted, the body forms a rounded button about  $\frac{3}{4}$  of an inch in diameter, but in full expansion it is generally elongated to the extent of  $2\frac{1}{2}$  inches, and terminates in a somewhat cup-shaped disk about  $1\frac{1}{4}$  inch wide, and having its extended edges frequently thrown into irregular festoons. The tentacula, about 150 in number, are arranged in four or five series, as in most of the group to which this species belongs; the first row contains twenty-five arms, about half the length of the diameter of the disk, and moderately stout; the others gradually diminish in size as they proceed outwards, their numbers at the same time increasing; but the irregular manner in which they are placed renders it difficult to enumerate the contents, or to determine the limits of any one of the series. The disk is of a uniform olive-brown without any superficial markings,—the appearance of radiating lines, sometimes visible, being only the upper edges of the internal septa showing through the transparent skin; the mouth opens transversely, and displays a regular crenation of its pink lining membrane. The tentacula are of a reddish purple, and entirely destitute of rings or other marking; they present a remarkable contrast to the body of the animal, which at its upper part is of a dark orange colour, gradually assuming a paler tint towards the base; numerous white sucking-pores are disposed over the upper surface, and afford points of attachment to surrounding substances, when required to conceal the body; they also give exit to the convoluted filaments, which are abundantly thrown out from them, and the mouth, when the animal is irritated. Its natural haunts appear to be narrow crevices of rocks, into which it can retire when alarmed, and I was prevented obtaining many specimens by their having chosen such inaccessible hollows for their residence. Four or five examples were, however, procured at extreme low-water mark, from the very productive rocks outside Dartmouth harbour, and, excepting in size, presented no points of difference. I propose for this species the name of *vinosa*.

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June 24, 1856.

Dr. Gray, F.R.S., in the Chair.

1. ON THREE GENERA OF VESPERTILIONIDÆ, FURIPTERUS, NATALUS AND HYONYCTERIS, WITH THE DESCRIPTIONS OF TWO NEW SPECIES. BY ROBERT F. TOMES.

(Mammalia, Pl. XLII., XLIII.).

The genus *Furia* was established by M. F. Cuvier from the examination of a single example taken at Mona in South America, by M. Leschenault.





Gray, John Edward. 1856. "June 10, 1856." *Proceedings of the Zoological Society of London* 1856, 150–172. <https://doi.org/10.1111/j.1469-7998.1856.tb00339.x>.

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