PROCEEDINGS
OF THE
SCIENTIFIC MEETINGS
OF THE
ZOOLOGICAL SOCIETY OF LONDON.

January 8th, 1861.

Dr. Gray, V.P., in the Chair.

The following papers were read :—

1. ON TYPICAL SELECTION, AS A MEANS OF REMOVING THE DIFFICULTIES ATTENDING THE DOCTRINE OF THE ORIGIN OF SPECIES BY NATURAL SELECTION. BY E. VANSITTART NEALE, F.Z.S.

The great interest excited in the scientific world by the theory of the origin of species proposed by Mr. Darwin, and the obscurity necessarily attached to many of the data employed in the arguments adduced either in support of or in opposition to it, must be my apology for bringing before this Society the following considerations, resting upon admitted facts, but which appear to me both to elucidate the difficulties of that theory, and to suggest the means of overcoming them.

The strong points of Mr. Darwin's theory I apprehend to be, (1) the satisfactory explanation afforded by it of the analogies and differences observed in the various forms of living beings which have been, or actually are, the tenants of our globe; (2) the fact, experimentally ascertainable, that the element of variation whence his explanations are derived exists in active operation at the present day. Mr. Darwin can say of the modifications of form manifested in living organisms,

PROC ZOOLOG. SOC.—1861, No. I.

as Sir I. Newton said of the attractive force of the earth, "*hypotheses non fingo*." I appeal to a power which can be shown to be at work in the present world; I ask only, is it capable of explaining the phenomena observable now, or ascertained by probable induction to have occurred formerly upon it?

These are great merits. But if these strong points of the theory are connected with the principle of diversity, whence the animal and vegetable creation derives the charm of its endless variety, it has, as I conceive, also its weak points connected with the opposite principle of *unity*: whence it attributes too large a share to death, and too small a share to life, in the formation of species.

In nature we find *two* powers at work, a principle of *change* producing varieties, and a principle of *permanence* producing species. Man is able, by making use of the principle of change, "adding up," as Mr. Darwin happily says, the successive minute differences of different generations in different directions, to bring about wonderful transformations in the original form whence he started,—from the Rock Pigeon, for example, educating Carriers, Tumblers, Runts, Fantails, &c., forms differing from each other more than do many undoubted natural species—more, for instance, than Fieldfares differ from Thrushes, or Wood Wrens from Willow Wrens. But, although man can do wonders through this principle of *change*, the principle of *permanence* slips through his fingers. He can preserve his varieties in their distinctness, only so long as he intervenes to prevent their interbreeding. Leave Carriers and Tumblers, Fantails and Runts together, without pairing them, and a race will soon arise neither Carrier, nor Tumbler, nor Fantail, nor Runt, but apparently in the process of reverting towards the Rock Pigeon. But Fieldfares and Thrushes, Wood Wrens and Willow Wrens live on for generation after generation, side by side, and remain Fieldfares and Thrushes, Wood Wrens and Willow Wrens still.

That this is the case, is unquestionable. It is equally clear why it is the case. Each distinct species in nature interbreeds by preference with those of its own kind; and if accidental unions do take place between nearly allied species, the offspring are either sterile or, at all events, much less fruitful than their parents. Here is the principle of *permanence* in nature, preventing the principle of *change* from producing *confusion*, as, again, the principle of *change* prevents the principle of *permanence* from producing *monotony*. Whence comes this principle of permanence? I look to Mr. Darwin for an answer, in vain. All that he says on this point amounts only to the position that the progeny of nearly allied species are not always sterile. That the preservative tendency does not necessarily accompany a given amount of external difference is clear; for man can produce in living organisms external differences greater than those associated in nature with this principle of permanence, without calling that principle into action. To attribute it to the greater length of time occupied in the formation of natural species than in that of a variety, is to make an assumption wholly destitute of proof, and, indeed inconsistent with a very beautiful and essential part of Mr. Darwin's hypothesis, namely, the doc-

trine that the living principle never loses its energy, and that the power of life now at work on our globe has been transmitted, unchanged in its essence, though infinitely richer in its manifestations, from the first inhabitants of the earth to the generations inhabiting it at the present day.

If then, Mr. Darwin may appeal to the principle of *change* disclosed in living organisms, as a "true cause," capable of accounting for the mutual affinities of species by the supposition of descent from a common origin, those who are opposed to his views are no less entitled to appeal to the principle of *permanence*, disclosed in these organisms, as a real force, not to be explained away, but requiring to be reconciled with the principle of change in any theory which shall satisfactorily account for the origin of species.

It appears to me that this reconciliation may be effected through the intervention of a conception proposed by one of whose labours and reputation we are justly proud, as an explanation of the "homologies" of structure, which he has profoundly illustrated. I mean the conception of the typical character pervading all organic life. But to make this apparent, I must premise some remarks on the characteristics of natural types. The types of nature must be carefully distinguished from the types of art. The types of art are forms realized in their perfection in some particular individual. A Phidias may produce a Jupiter, a Minerva, or a Venus, as the perfect outward embodiment of the ideal of Majesty, or Wisdom, or Grace. A Danecker may toil for years, in labour with his conception of the head of Christ. But in each case, the type, when realized, is a fixed, individualized object, expressing some one predominant characteristic, to which all others, though not necessarily lost, are subordinate. The types of nature are, as I conceive, ideals not of external form, but of internal relations, each realized in countless modifications of forms differing from one another in infinitely varied particulars, but balanced around central points common to them all. But the preservation of this balance depends upon the aptness of each variety of the type for interbreeding with all the rest, and thus perpetually recombining its own peculiarities with theirs. If any of the varieties by the action and reaction of which a type is preserved become locally distinct from the others, subtypes will arise; as we find to be the case in mankind. The original type becomes the centre of a circle including many lesser circles, where we find the same tendency repeated. Now this character of natural types offers a mode of passage from one type to another. Assume a subtypical variety to acquire a special aptness for interbreeding with itself, to the exclusion of other varieties, and it would become an independent type. But how is this special aptness to be acquired? That it does not accompany the formation of subtypes we see in numerous instances; and it would clearly be inconsistent with the idea of a natural type that it should do so, if, as has been suggested, it is the characteristic of such a type to preserve itself by the mutual actions of its varieties. That it should belong to some one variety and not to others, in virtue of the general principle of variation, is a supposition inconsistent with

itself: a general principle must apply to every individual case. There remains only the hypothesis of a special selection, by which particular varieties are internally modified, so as to acquire this special aptitude. Now such a special selection appears to me to involve the transition, which must take place at some point in all physical research, from conditioned, to self-conditioning power, from will working by upholding laws, to will working by constituting the laws to be upheld; in other words, we must resort to the hypothesis of an intelligent action as the only intelligible one. Accordingly it is to an intelligent choice, exercised upon the infinity of possible variations capable of arising in different organisms, through the laws belonging to their natures, that I would attribute the formation of species by what I venture to call Typical selection.

When that Power, of whose ordering will I conceive nature to be the expression, purposes to produce a new race, I suppose It to select from some existing race those individuals which show a disposition to vary in the desired direction, so modifying their constitutions as to render their unions with each other more prolific than their unions with other individuals differently formed, and if they are conscious agents, so modifying their instincts as to give them a preference for each other. How this internal modification is produced, I no more attempt to explain than Mr. Darwin attempts to explain how life was originally produced and is continued. The one act is not more difficult to conceive than the other. But there is no necessity for supposing the modification to be considerable in any one case. Divine providence need not be in a hurry. The amount of change at any step of the process of forming a new species, may be very small, and the completion of that process may require many generations.

The modification of the sexual instinct and fertility of sexual unions may be gradually introduced, and at first be scarcely perceptible. But if the alteration be brought about by an internal action tending always in the same direction, each generation will approximate more closely to the character of a new type; and by the time that the external change has become considerable, a corresponding amount of internal change will have been produced. A new phase of the principle of permanence will have taken its place in creation, amongst the many phases of the principle of change; the variety will be transformed into a species.

By this conception of the origin of species, we escape from another serious difficulty, which appears to me to lie in the way of the conception of their formation by such a process of external selection as Mr. Darwin assumes. When we are asked to suppose that differences so considerable as we observe between different organisms, past or present, have been brought about by a process precisely analogous to that by which man can change the shape of a sheep or a pigeon, we naturally ask whether there are no limits to the amount of change producible by man? Could he, by any degree of watchfulness however long continued, expand a race of sparrows to the size of condors, or condense a race of turkeys to the size of humming-birds, or

lengthen out a pig's snout, and thicken his legs and body into a trunk and frame similar in size to the elephant? Mr. Darwin must contend that this would be possible, if man continued to act uninterruptedly, for a sufficient length of time in the same direction. Perhaps future experiments may enable us to speak with certainty upon this point. At present I conceive the general feeling of the most experienced breeders would be against him. It may be true that they "habitually speak of an animal's organization as something quite plastic, which they can mould almost as they please" by the principle of selection (Darwin, p. 31). Yet Mr. Darwin also tells us that "all the breeders of the various domestic animals, and cultivators of plants, with whom he has ever conversed, or whose treatises he has read, are firmly convinced that the several breeds to which they have attended are descended from so many aboriginally distinct species" (*id.* p. 28). Now they are no doubt mistaken in this notion; and it is easy to see whence the mistake has arisen,—namely, from each one having attended only to one out of many possible kinds of variation, producible in the particular animal or plant forming the object of his care. But it is difficult to conceive whence the general notion could be derived, if each breeder found no limit, no stop, to the amount of variation which he can produce in the particular direction selected by him for experiment.

But this difficulty disappears, like that first stated, if the process of selection be transferred from the external action of circumstance, to the internal action of the living Power gradually modifying the constitution of the individual. It is a supposition agreeable to common experience, that to each particular constitution, certain limits of change are assigned, within which the possible varieties of the creature possessing it fluctuate. But if the constitution changes, these limits must be presumed to change also. Each fresh species, then, may be regarded as a resting-place in the advance of life,—the development of the possible varieties inherent in it being left to the external action of circumstances; while among these the Power manifested in life selects the forms most suitable to be converted into other species, and thus carries on the differentiation of living beings a step further in its proposed course.

Other grave difficulties disappear if we accept the idea of "typical," in place of "natural" selection. One very serious one, in my judgment, is the difficulty of seeing how natural varieties could perpetuate themselves at all, if they retained that mutual prolificness characteristic of all the varieties upon which we can experimentalize.

Able and ingenious as is Mr. Darwin's argument to show that selection, by the "struggle for existence" is possible, he seems to me, throughout the whole of it, to confuse two distinct conceptions, namely, the *effect* of peculiarities of structure in giving one plant or animal an advantage over another, and the *preservation* of those peculiarities. His reasoning would be conclusive if applied to a state of things where each different variety was distinguished by an exclusive disposition to produce its own kind, as we actually find to be the case with species; but he applies it to a state of things

where, by his own hypothesis, he has swept away the ground of his argument. If one variety of wading birds possessed longer bills than another, this "advantage" might lead to the ultimate annihilation of the short-bills, through the more rapid multiplication of the long, if a long-billed parent always produced a long-billed offspring. But if the long-bills and the short live side by side, as they must do if they are to struggle for existence, and possess that aptness and disposition for interbreeding which all known varieties are experimentally found to possess, and the laws of interbreeding be supposed to be what they now are, long-bills and short would soon merge into one race of medium-billed birds, between whom the struggle for existence would be reduced to one of individual strength. In connexion with this topic, the fact insisted upon by Mr. Darwin must be borne in mind, that intercrossing between varieties is conducive to fertility, as on the other hand breeding in and in is well known to cause unhealthiness, if not sterility. On the whole, then, I conclude that the permanent distinction of type which Mr. Darwin assumes to result as a *consequence* from the struggle for existence, is really a necessary *condition*, in order that this struggle may assume the form of a contest of races.

Illustrations of this position might be endlessly multiplied. I will adduce one only, drawn from the instance of the humble bee and the honey bee, the origin of whose architectural powers is the subject of a most interesting and ingenious discussion in Mr. Darwin's work. He adduces, as the "advantage" of the honey bee, and therefore the constitutive principle of its peculiarities, the economy of wax in the construction of its cells when compared with the round imperfectly connected cells of the humble bee; for thus, in seasons when honey was scarce a saving in food might result. But the humble bee still raises her lowly dwellings along side of the palatial store-houses of her insect neighbour. Whatever the vicissitudes of the seasons may have been, since she first appeared on the earth, Death has not swept her away; she survives now. What probable ground, then, is there for assuming that she was not present when Mr. Darwin's incipient honey bee began its work, to destroy by intercrosses the peculiarities of her rival, and bring down its "advantages" to the common level?

It is unnecessary to dwell upon the complete removal of this difficulty, by the supposition of "typical selection." But more notice is requisite of the bearing of this supposition upon another subject, whereon Mr. Darwin's hypothesis of selection by means of the struggle for existence has produced much controversy, namely, the evidence of the "stone-book." That, if a new species can be formed at all by "natural selection," it can be only as the ultimate result of a long balancing of rival tendencies, ending in the preponderance of one side, Mr. Darwin admits. It follows, as he also admits, that each new species, if thus formed, must have left behind it a long trail of intermediate forms between itself and the species whence it arises. Now, we do not find this "trail;" the links are wanting in many cases; and Mr. Darwin's explanation of their failure is, that they once

existed, but that the evidence of their existence has either not yet turned up, or has been altogether swept away.

Other eminent geologists have questioned the probability, if not the possibility of this total sweeping away of the links wanted to bind together, upon Mr. Darwin's supposition, the forms known to have existed. I do not propose to enter into this controversy, but only to remark that, whatever difficulty may arise from the absence of intermediate forms in tracing connected lines of descent of the different forms whose existence has been ascertained, it is most materially diminished on the hypothesis of typical selection,—(1) because the advance in each case will be always in the same direction, and therefore the interval between one marked form and another will be indicated by much fewer steps than are required on Mr. Darwin's supposition, even if each step be very gradual; (2) because it is consistent with our present experience, that a very considerable amount of change may take place in animal or vegetable organisms at once. I will refer only to General Tom Thumb, and the Giant whose skeleton is preserved in the College of Surgeons, in proof of the important departures from the ordinary human scale of proportion which may be produced at one birth, under the ascertained laws of life. Now, suppose individuals, male and female, characterized by the possession of forms thus departing from the general human standard, to be selected to constitute a new human species, forming the centre of variations extending on all sides of the type thus manifested, and the process to be repeated three or four times, by transitions of equal magnitude on each occasion, in both directions; we should arrive at forms almost as distinct from each other as Swift's men of Lilliput and Brobdingnag. And yet the intermediate variations might succeed each other at short intervals, and leave but scanty traces of their existence in any geological record. The Lilliputian and Brobdingnagian students of geology might thus find it as difficult to connect their own history with that of the present race of mankind, by geological evidence, as we find it to trace the descent of Teleostean fishes, or Saurian amphibians, by the same records.

The conception of "typical selection" seems also to elucidate another subject, not altogether unencumbered with difficulty on Mr. Darwin's hypothesis, namely, the disappearance of types. If one species is educed out of another by a modification of the sexual character of some particular variety of the first, whence it acquires a peculiar aptness and disposition for interbreeding, this variety would be withdrawn from the circle of varieties by whose mutual action the original type was preserved. Consequently the type would itself have a tendency to alter; and if several varieties were thus withdrawn from any type, it would seem that this type must change into some modification of itself, and take its place amid the circle of variously related types evolved out of its original unity. The process would be analogous to what appears to have happened in some cases, where, through local circumstances or human interference, many distinct varieties of the same plant or animal have been formed, as in the case of wheat, of horses, of dogs, and of man himself; and the result

seems to accord with many ascertained facts in the relations of plants and animals, living and extinct.

If in the course of these observations I have been occupied in criticising rather than in defending Mr. Darwin's views, the object of this criticism has been to separate what I regard as a most valuable scientific conception, from association with a theory which, though highly ingenious, is entirely hypothetical, and, in my judgment untenable.

That there is a principle of variation at work around us in the living world, animal and vegetable, is certain. That by adding up successive changes effected by this principle, we can bring about a large sum of total change, is ascertained. The idea that the variety of living beings to be observed on the earth has arisen from the long-continued operation of this ascertained principle of variation during the countless ages when, as we learn from geology, a vast succession of creatures gradually tending to similarity with those existing now, have followed each other as its occupants—creation, to use the forcible language of Professor Owen, ever compensating for extinction—is an idea full of the promise of scientific results, because it seeks to explain the unknown by the known or knowable, and to substitute thought interpreting experiment, in place of thought dealing only with itself. This true scientific character forms the distinction between Mr. Darwin's fundamental hypothesis and the theories of those who like Lamarck, or the author of the 'Vestiges of Creation,' have previously attempted to embrace under one comprehensive thought the riches of the organic world. They presented only conjectures incapable of being tested; he has offered a conception respecting the past, which may be tested by the study of the present.

But this observation applies only to the conception that specific differences arise from selection. In referring the method of selection to the "struggle for existence," Mr. Darwin leaves the solid ground of experiment for the airy regions of ingenious hypothesis. The "struggle for existence" is perpetually going on around us; yet Mr. Darwin has not adduced a single case of even an approach to the formation of a new species as its ascertained result. All his instances of the effects produced by the addition of minute changes, in animal or vegetable organisms, are instances where the principle of variety is modified in its operation by the principle of intelligent choice. That the last principle has been concerned in producing the changes observed in nature, we cannot, indeed, show directly; but when we learn experimentally that, by this means, something very like natural species can be produced, surely it is more accordant with the sobriety of science to assume that by this means also natural species have been produced, than to refer their production to another principle, which cannot be shown to be in operation at all, and of which, if it is in operation, we cannot show how it could bring about the effects attributed to it.

I have said "something very like natural species;" for, as has been observed above, man cannot confer upon his varieties the self-preserving power characteristic of true species. But this is only accordant

with the universal analogy of the distinction between man's work and the works of what we call Nature. Man always works from without, Nature from within. But otherwise their works are subject to similar conditions. The crystalline lens of the eye is formed of elementary particles, held together by molecular or chemical attraction, as is the lens of the eyeglass. The formation of the optical image, the prevention of diffraction, is brought about in each case by an observance of the same principles of construction. But the eyeglass is shaped and put together by a power operating from without, upon masses of elementary particles, already drawn to each other by their natural attractions. The lens of the eye is formed by a power working from within, which draws these elementary particles together, by secret processes, into positions where their natural attractions keep them in the required arrangement.

So is it, as I conceive, in the formation of species. Man and Nature both bring about changes of form in organized beings, by the same process, namely, by directing into particular channels the tendency to vary inherent in all organisms, "adding up" in different directions the sum total of many changes, tending the same way. Both effect this addition by the same instrumentality, namely, by favouring sexual intercourse in the organisms which show a tendency to vary in the required direction, and impeding it in those which do not. But man, working in this case as in every other from *without*, can effect his "additions" only by bringing the suitable organisms together for the purpose of that intercourse, and keeping the unsuitable apart. Nature, working, in this case as in every other, from *within*, effects her additions by so modifying the wish for this intercourse, that the animals whom she desires to bring together shall prefer each other's society, and so modifying its consequences, that accidental unions of organisms, whether animal or vegetable, with other than the organisms suitable for her purposes, shall be incapable of seriously disturbing them. To seek an explanation of the natural process in an external action, seems me as contrary to the whole analogy of our knowledge, as it would be to seek an explanation of the human process in an internal action.

And yet there is an external action in nature, bearing upon the constitution of species—an action admirably described by Mr. Darwin under the name of the struggle for existence, and having, as I apprehend, an effect analogous to that of external action on living organisms considered individually. The struggle with circumstances destroys the dead, but it developes and exercises the living individual; and so the struggle for existence developes the capacities of variation of each typical form, while it prevents those variations from injuring the type. For the order of the living creation depends upon the more or less perfect transmission of the distinctive peculiarities of each living being to its descendants; and since these peculiarities are subject to constant variation, there would be a tendency to a perpetual degradation of each natural type, but for some counteracting influence. For the characters of a living being cannot be balanced like

ciphers in arithmetic—so many good on the *plus* side, so many bad on the *minus*: they involve a mutual harmony, which cannot be departed from far in any direction, without fatal injury to the whole: one vice spoils many virtues; and the union of great perfections with great defects can, at the best, be only grotesque.

Now the risk of degradation consequent on these circumstances appears to be prevented principally by two causes: first, that, in the general course of nature, more than one individual must concur in every act of generation; for since these individuals commonly differ in their accidental peculiarities, these peculiarities tend to efface each other, and thus to preserve in their offspring the typical character: secondly, that Death is, so to speak, ever on the watch to keep the individual up to the mark, sternly sweeping away the varieties afflicted with any serious imperfection, while he leaves the more perfect specimens to transmit their endowments to their posterity,—an operation probably aided by what Mr. Darwin has called “sexual selection.”

In this conservative action, not in the creative operations ascribed to Death by Mr. Darwin, his true function appears to me to consist. Death throws away the worst of each *kind* to preserve the best; but he must have the *kind* given him to operate upon. So he sweeps away those types which change of circumstances have made unsuitable to the surrounding creation, to make room for others; but these are educed from the former, not by the unconscious action of death, but through an “ordained becoming,” realized by the wise foresight of the ever-acting Power whose works we generalize into Nature.

Our greatest living poet has poured forth the dirge of existence:—

“Are God and Nature, then, at strife,
That Nature lends such fearful dreams?
So careful of the type she seems,”
So careless of the single life.
So careful of the type! but no,
From scarped cliff, and quarried stone,
She cries, “A thousand types are gone,
I care for nothing—all shall go.”

But the history of organized being, considered as a succession of typical forms, assumes a more cheerful character; life appears everywhere triumphant over death. As, in the order of nature the individual transmits to its successors its own peculiarities, modified, indeed, but not lost in the great stream of being, so each type, if it passes away when it has done its work, is yet not lost, but transmits to succeeding types the undying fire, tinted with its own characteristic hue. And this succession of typical forms, like the perpetuation of each particular type, is brought about by the action of the individual, following the laws and impulses of its own nature, and unwittingly contributing, by the performance of its own little part, to the gradual unfolding of the majestic drama of creation. But the arrangement of the scenes is due to foresight, not to chance, to the constructive power of thought adapting organization to circumstance, not to any

Fig 1.

Fig 2.

A B C D E
Fig 5.

Fig 1a.

Fig 2a.

Fig 2b.

A B C D E
Fig 6.

B C D
Fig 7.

Fig 3a.

Fig 3b.

Fig 4a.

Fig 4.

Fig 3.

power in circumstance to create by destroying. In the words of the same great master whose language I have already quoted—

Nature also, cold and warm,
And moist and dry, *devising* long,
Through many agents, making strong,
Matures the individual form.

2. ADDITIONS TO THE MONOGRAPH OF THE GENUS EPOMOPHORUS. BY ROBERT F. TOMES, CORR. MEMB. Z.S.

(Plate I.)

1. EPOMOPHORUS LABIATUS, Temm., sp.

Since the publication of my monograph of the genus *Epomophorus* in the 'Proceedings' of the Society, the kindness of Prof. Schlegel has enabled me to examine the type specimens of the *Pachysoma labiatum* of M. Temminck in the Leyden Museum; and I find that the male, as I had supposed, is quite distinct from *E. macrocephalus*, although not differing from it so greatly as I formerly believed. It resembles the latter species in its general proportions and appearance, especially in the length of the head and face; but it has longer fur on all parts of the body, and that of the back is somewhat redder in colour. On the abdomen is an oval whitish patch rather more distinct than in *E. macrocephalus*, but less so than in *E. franqueti*. The specimen is nearly, if not quite adult, and has the following dimensions:—

	in.	lin.
Length of the head and body	4	9
— of the head	1	10
— of the ears	0	7
— of the fore-arm	2	6
— of the longest finger	4	6
— of the fourth finger	3	6
— of the thumb	1	1
— of the tibia	1	1
— of the foot and claws	0	9
— from the nose to the ear	1	5
— from the nose to the eye	0	9
Expanse of wings, about	17	0

The so-called female of *Pachysoma labiatum* contained in the same collection is quite a young example of some larger species with a less elongated muzzle, probably of *E. gambianus*.

2. *E. CRYPTURUS*, Peters.

In my account of *E. gambianus* I included the *E. crypturus* of Dr. Peters as a synonym; but the assertion of the identity of the two species had scarcely appeared before I saw in the Leyden Museum, a specimen which differed from *E. gambianus* in several respects. Shortly afterwards a specimen of an *Epomophorus* from Natal came into my hands, which I had no difficulty in recognizing

as identical with the species in the Leyden Museum; and a more careful examination and comparison of this species with the type specimen of *E. gambianus*, and with the admirable figures and detailed description of *E. crypturus* given by Dr. Peters, induced me to refer it to the latter species, which I now regard as distinct. It will be unnecessary to enter into a detailed description of the species, because that has been so well done by the original describer; but it may not be out of place to state the chief points of difference between it and *E. gambianus*, which I have before described.

The *E. crypturus* is altogether rather smaller than *E. gambianus*, and has the fur on all parts much longer, and extending much more on to the membranes, especially along the fore-arm, above and below, on the legs and feet, and on the membrane of the coccyx. The ears are broader, but not longer; and the interfemoral membrane is of greater breadth, especially near the calcaneum. The supra-orbital processes of the cranium are also longer than in *E. gambianus*; but it is necessary to state that these parts in the figure of the skull of the latter species, which accompanies this communication (figs. 2 and 2 a), are represented as a little too short, their points having been broken off before passing into the hands of Mr. Ford.

EXPLANATION OF PLATE I.

The accompanying plate is given to illustrate the peculiarly formed crania of some of the species of *Epomophorus*, and to show, comparatively with that of the allied genera *Pteropus* and *Pachysoma*, the singular dentition of this genus.

Figs. 1 and 1 a. *Epomophorus macrocephalus*, from the type specimen.

Figs. 2, 2 a, and 2 b. *E. gambianus*, from types.

Note.—The supra-orbital process in these figures is represented as rather too short.

Figs. 3, 3 a, and 3 b. *E. franqueti*, from type specimens.

Figs. 4 and 4 a. *E. schoensis*, from a specimen from Gaboon.

Fig. 5. *Pteropus edulis*.

A. First or rudimentary premolar, often absent.

B. Second premolar, corresponding with the *canassier* of the *Carnivora*.

C, D, E. True molars, the hinder one of rudimentary size and shape, and showing the first indication of that decrease in their development which attains its full extent in *Epomophorus*.

Fig. 6. *Pachysoma stramineum*.

The letters A, B, C, D, E indicate the same teeth as in fig. 5; those marked C, D, E are more rudimentary than in *Pteropus*, C, D, E of fig. 5.

Fig. 7. *Epomophorus macrocephalus*.

The first premolar and last true molar are absent, and the second molar (D of figs. 5 and 6) is here much reduced in size, and corresponds in its *degree of development* with E of figs. 5 and 6.

3. ACCOUNT OF THE REPTILES SENT BY DR. WUCHERER FROM BAHIA. BY DR. A. GÜNTHER.

Of the living specimens of Reptiles sent by Dr. Otto Wucherer from Bahia, only a few have survived the transport. Most of them perished during the voyage; and several arrived in so exhausted a

condition that they died very shortly afterwards. It became evident, from the emaciated state of the latter, that those animals had been killed, not by the change of the temperature, but by want of food and water. Those tropical animals naturally require a greater supply of the latter than our European species do; and perhaps it would be better to place them during the transport in a cool place on board the steamer, in order to subdue the natural functions and to lessen the desire for food. Once every week, on a bright day, they ought to be brought on deck and exposed to the sun; then some water might be poured into the cage or box in which they are kept. I have no doubt that the failures hitherto experienced in bringing over the beautiful *Hylæ* of the Tropics, and other reptiles living in damp places, might be avoided by the adoption of the measures recommended.

As it is, however, only three of Dr. Wucherer's specimens survive—a beautiful specimen of the South American Rat-Snake, *Spilotes variabilis*, about 6 feet long, one *Polychrus marmoratus*, and one *Philodryas viridissimus*. The two former are exhibited for the first time, and apparently are doing very well. The Rat-Snake feeds regularly on birds and small mammals; Dr. Wucherer has observed that this species has the power of setting its tail in a trembling motion, like the Rattle-Snake, if made angry. I have once seen the same in the specimen living in the *Gardeus*, and several times in the North American *Coluber quadrivittatus*, whenever it was attacked by a dog: in the latter case, it was not fear which produced the trembling motion of the tail; for it was immediately followed by the snake striking at the dog*.

The specimens of *Polychrus marmoratus* show the remarkable peculiarity, that their femoral pores are not visible; this has been observed also by Bibron, who says that they are often very indistinct in this species. It changes its colours, like the *Chamæleon*, the name of which has been conferred on it by the inhabitants of Bahia. Its ground-colour is brown when it is cold or asleep, bright green when it feels comfortable, and yellowish-green when exposed to great heat. Also the great capacity of the lungs and the lively motion of the eyes (which, however, act in concert with each other) remind one of its representative of the Old World. Since it has been removed to a warmer place than the cages in the Reptile-house are, it has recovered its full strength, feeds regularly on meal-worms, and is very fond of milk. Being a Tree-Lizard, its favourite place is on the branches of a large geranium, near the fire-place; but even that place is sometimes too cold for it; and then it will approach nearer to the fire than it is possible to keep the hand for any length of time. Nevertheless it lies there basking for hours, extending the neck towards the fire, and stretching the hind limbs in a line with the tail. These animals will drink much; and the quantity of water swallowed on a single day by this specimen, the body of which does not exceed the length of 5 inches, cannot be less than half an ounce.

* The young of *Cenchrus piscivorus*, born alive in the Gardens about the middle of February, show this peculiar motion more frequently than any other of the species mentioned.—March 5.

The researches of Dr. Wucherer, continued for a considerable space of time and confined chiefly to Snakes, prove that the environs of Bahia are by no means so poor in species of this tribe as has been represented by Castelnau. On the contrary, the following list, containing chiefly the species common in the immediate vicinity of Bahia, will be considerably increased, if Dr. Wucherer carries out his intention of extending his researches beyond those limits; and it is to be hoped that, with the assistance of this gentleman and of his friends*, we shall produce one of those local faunas which are so valuable as contributing to our knowledge of geographical distribution, and to the distinction of the local variation of species.

The following list of Snakes has been made up from the notes of Dr. Wucherer, and from actual specimens sent in spirits to the British Museum :—

1. *Geophis*, n. sp.† From Canavieras, a small town south of Bahia.
2. *Elapomorphus wuchereri*, Gthr. From Ilhéos.
3. *Liophis cobella*, L.
4. — *merremii*, Wied. Very frequent.
5. — *reginæ*, L. Very frequent.
6. — *conirostris*, Gthr.
7. *Xenodon severus*, L.
8. — *rhabdocephalus*, Wied. Very frequent.
9. — *colubrinus*, Gthr. The validity of this species has been fully acknowledged by Dr. Wucherer. He has sent two specimens in spirits, one of which measures 3 feet 8 inches in length; another, sent off alive, perished on the voyage. Dr. Wucherer has observed that the scales of all the species of *Xenodon* have a small colourless spot near the tip; it is especially distinct in *X. colubrinus*. The West Indian species of *Dromicus* have this spot yet more distinct. All the species of this genus are very savage and apt to bite; they frequent dry places; their food, however, consists in frogs.
10. *Spilotes corais*, Cuv. Frequent; called *Pupapinta*. Scales in fifteen or seventeen series.
11. *Spilotes variabilis*, Wied. Frequent; called *Cainana*. Dr. Wucherer found the loreal always absent in old specimens.
12. *Spilotes pæcilostoma*, Wied.
13. *Coryphodon pantherinus*, Merr. The form of the head and the colours of this species vary much according to age.
14. *Herpetodryas fuscus*, L. Frequent.
15. — *carinatus*, L. Less frequent.
16. *Philodryas viridissimus*, L. Very frequent.
17. ? — *serra*, Schleg. A single specimen from Ilhéos.
18. *Dryiophis acuminata*, Wied. Very frequent; called *Cipó*.
19. — *argentea*, Daud. Less frequent.
20. *Thamnodynastes nattereri*, Mikan. Frequent.

* Dr. Wucherer has been assisted in collecting by Consul C. A. Gültzow, Dr. Heller, Dr. Tölsner, Herr v. Steiger, H. Föppel, and other gentlemen. Mr. Bennett has kindly taken charge of the reptiles during the transport.

† Dr. Wucherer has reserved for himself the description of this species.

21. *Thamnodynastes punctatissimus*, Wagl. One specimen from Canavieras.

22. *Leptodeira annulata*, L. Very frequent.

23. *Eudipsas leucocephalus*, Mikan. Frequent.

24. *Leptognathus catesbyi*, Weig. Two specimens from Canavieras.

25. *Scytale coronatum*, Schneid.

26. *Oxyrhopus clælia*, Daud.

27. — *petolarius*, L.

28. — *trigeminus*, D. & B. Frequent.

29. *Uranops angulatus*, L. Frequent near rivers.

30. *Elaps lemniscatus*, L. Very frequent.

31. — *corallinus*, L.

32. *Epicrates cenchria*, L. Rare; called *Giboia*.

33. *Xiphosoma caninum*, L.

34. *Boa constrictor*, L. Frequent; called *Giboia*.

35. *Eunectes murinus*, L. Very frequent; called *Sucurujuba*.

36. *Craspedocephalus atrox*, L. Called *Caisaeca*; frequent, especially near Nazareth on the river Jaquaripa.

37. *Craspedocephalus bilineatus*, Wied. This is a venomous Tree-Snake; it is called *Surucúcú patyoba*, from the palm on which it usually is found; it renders the cutting of the leaves of this palm very dangerous. Another similar snake lives on the Uricana palm, from which its name of *Surucúcú uricana* is derived.

38. *Lachesis mutus*, L. Called *Surucúcú*; it lives in holes together with *Cælogenyx paca*, and is very dangerous to the dogs used in shooting the latter.

39. *Crotalus horridus*, L.

I add the description of the new species of Snakes, and of a new Lizard, sent by Dr. Wucherer to the British Museum.

ELAPOMORPHUS WUCHERERI.

Six upper labial shields, the second and third of which enter the orbit; two posterior oculars. Scales in fifteen rows; ventral shields 181–208. Reddish-olive (in spirits); head black, with a yellow band across the occipitals; sometimes with three dark longitudinal lines. Very old specimens uniformly coloured, the head being dirty light brown.

Hab. Bahia.

Description.—This species has a very slender body, whilst the tail is comparatively short. The head is depressed and obtuse, like that of an *Elaps*. Rostral shield of moderate extent, not reaching to the upper surface of the head. Anterior frontals one-third only of the size of the posterior ones; vertical subhexagonal, somewhat longer than broad; occipitals large. Nasal shield oblong, occupying the place of a loreal; one anterior, two posterior oculars. Two temporal shields, one behind the other, the anterior in contact with the oculars. Six upper labial shields, the second produced upwards and backwards so as to enter the orbit, the third immediately below the eye. Lower labials seven or eight, the fourth and fifth being very

large. Two pairs of chin-shields; two or three pairs of scale-like shields between the chin-shields and the ventral plates. Scales smooth, polished, rhombic, in fifteen rows. Ventral shields 206-208;

anal bifid; subcaudals 33-47. Dr. Wucherer has found in a very large specimen 181 ventral and 32 subcaudal shields.

Specimens of 19 inches length are reddish-olive in spirits, with a darker line along the vertebral series of scales. In a specimen in which this line is very distinct, another similar line is to be seen along each side of the body, between the fourth and fifth outer series of scales. Smaller specimens have those lines still more distinct. The head and the anterior portion of the nape are brownish-black, with a broad yellow band across the occipitals and temporals to the side of the mouth. The lower parts are yellowish. Very large specimens are of a uniform bright gamboge-yellow, the head being dirty light brown, gradually becoming lighter posteriorly; there are some greyish-ash irregular spots on the side of the head and under the chin, and some minute irregular grey spots on the sides of the belly and on the outermost rows of scales.

The posterior maxillary tooth is grooved.

Two specimens were taken at Ilhéos; one is 18 and one 19 inches long. Another large specimen, of which a sketch has kindly been communicated to me by Dr. Wucherer, is from the same place; it was captured on an open piece of ground before the house of a Cacao-planter, situated some 60 feet above the level of the river and perfectly dry; its total length is 4 feet 5 inches, and the length of the tail $4\frac{1}{2}$ inches. Its habit is stouter than that of the younger specimen, and it appears to me to be a female.

TRACHYCYCLUS SUPERCILIARIS. (IGUANIDÆ.)

?? *Proctotretus talsneri*, Berthold, Gött. Nachr. 1859, p. 179.

Occipital plate of moderate size, as large as the eye. Above uniform brownish-olive (in spirits), yellowish below, a brown band along the lower side of the thigh and before the vent.

Hab. Bahia.

Description.—The head is slightly depressed, of moderate width,

the snout is as broad as long. The whole of the upper surface is covered with small, irregular shields, that in the middle of the occiput being the largest, about as large as the eye. The superciliary margin is sharply prominent, continued into the canthus rostralis, and formed by imbricate pointed scales, the point of which is directed backwards. The eyelids are entirely covered with small granular scales. The nostril is situated near the extremity of the snout, before the canthus rostralis, and separated from it by a shallow groove; it is in a single convex shield. The upper and lower labial shields are narrow, and there are two or three other series of small shields, running above, and parallel to, the upper labials, and covering the loreal region. The lower of those series extends to below the eye. The neck and the temporal region are covered with small keeled scales. The opening of the ear is large, subtriangular, and its anterior margin is provided with six or seven tooth-like plates. The scales on the lower side of the head are small, smooth, and become smaller on the throat, where they form a very indistinct collar. There are two oblique, deep folds on the side of the neck, between tympanum and shoulder.

The back is covered with keeled scales of moderate size, the keels terminating in small spines, and forming lines which converge from both sides towards the vertebral line. There are seventeen longitudinal lines of keels across the back between the shoulder-joints and fifteen between the hip-joints. The scales on the upper parts of the limbs are more sharply keeled and more spiny than those on the back. The tail is of moderate length, depressed on its base, and slightly compressed on its middle; it is surrounded by rings of scales, which are much larger than those of the body, each terminating in a prominent spine.

The scales on the belly are rather small and smooth, disposed in transverse series; there are about twenty longitudinal series across the breast between the front limbs; the scales on the lower parts of the limbs are smooth, except those on the soles of the feet and toes, which again are strongly keeled. There are no femoral or anal pores. Palatine teeth none.

All the upper parts are brownish-olive; the lower dull yellowish, with indistinct greyish reticulated lines; the region before the vent is deep brown, and a band of the same colour runs along the lower side of the thigh.

	in. lin.
Length of the snout (to the anterior angle of the orbit)	0 4
Length of the head (to the anterior margin of the tympanum)	0 10
Greatest width of the head	0 $8\frac{1}{2}$
Distance of the anterior angles of the orbits	0 $4\frac{1}{2}$
Length of the trunk (from tympanum to vent) ..	2 6
—— of the tail	5 0
—— of the fore limb	1 9
—— of the hind limb	2 6

	in.	lin.
Length of the fourth finger (from the base of the fifth).....	0	7
— of the fourth toe (from the base of the fifth).....	1	0
Total length.....	8	4

4. DESCRIPTION OF A NEW SPECIES OF WATER-HEN (*GALLINULA*) FROM THE ISLAND OF MAURITIUS. BY ALFRED NEWTON, M.A., F.L.S., F.Z.S.

A small collection of birds recently sent from Mauritius by my brother, Mr. Edward Newton, Assistant Colonial Secretary in that island, and a Corresponding Member of this Society, contains a single specimen of a Water-hen which I am led to consider as distinct from the common *Gallinula chloropus*, with which it has hitherto been confounded. To this conclusion I am chiefly induced by the weight I attach to my brother's opinion, which is decidedly in favour of regarding it as different from our own familiar bird; for, though it must be confessed that the differences observable in the dried skin are but slight, they are perhaps not more so than are to be found in other generally recognized species of the restricted genus *Gallinula*—as, for instance, *Gallinula galeata* of the New World and *G. tenebrosa* of Australia. The peculiarities, however, of the Mauritian bird seem to be constant; and I may perhaps be excused for stating my belief that in cases where we find an animal from any certain locality always presenting an appearance easily to be recognized, we are justified in distinguishing it by a specific name.

In addition to the characters of the Mauritian Water-hen, which I shall presently describe, I may add that my brother informs me that its cry is altogether different from that of our own bird, with which he is well acquainted; and I must remark that this is also the case with respect to the American species (*G. galeata*).

Mr. Gould has kindly enabled me to exhibit an example of this new species, which he received through Mr. Barclay from the Mauritius many years ago; and, as may be seen, it exactly resembles my brother's specimen in the peculiarities I have to point out. At the same time I am indebted to Mr. J. H. Gurney for the opportunity of showing that these peculiarities are not shared by the Water-hen of South Africa, as the bird on the table, from the collection recently sent to that gentleman by Mr. C. J. Andersson from Damara Land, does not differ, that I can see, from our own *G. chloropus*.

In an admirable series of articles on the ornithology of Madagascar, lately contributed by Dr. Hartlaub to the 'Journal für Ornithologie,' mention is made of a *Gallinula* in the collection at Vienna, killed by Bojer on the east coast of that island, which is stated to have "ocherfarbenen Unterschwanzdecken." Hence I should be disposed to presume that the Mauritian form is found in the neighbouring and larger island, and perhaps indeed is common and peculiar to

the whole Mascarene group, as Dr. Hartlaub, quoting the authority of M. Victor Sganzin (whose paper, by the by, in the 'Mémoires de la Société d'Histoire Naturelle de Strasbourg,' I have not been able to examine), states that it is common in Bourbon (Réunion) as well as in Mauritius.

I now proceed to designate the new species in proper form :—

GALLINULA PYRRHORRHOA, sp. nov.

Fulica chloropus, Julien Desjardins, P. Z. S. 1831, p. 45.

"*Gallinula chloropus*, V. Sganzin, Mém. Soc. d'Hist. Nat. Strasb. 1831-2, p. 45;" G. Hartlaub, Journ. für Orn. 1860, p. 173.

Gallinule or *Moor-hen*, auct. anon. in 'Mauritius Register,' 1859, p. lxxxv.

Gallinula — (?), 'Ibis,' 1861, p. 116.

Statura et aspectu Gallinulæ chloropodi *admodum similis, sed membrana frontali majore, caudæ tectricibus inferioribus ceruinis, pedibusque flavis.*

Hab. In insulis Mascarenis, Mauritiana, Borbonica (teste Sganzin) atque Madagascariensi (teste Bojer); differt voce a *G. chloropode*.

Mus. Vindobon., Joh. Gould necnon A. et E. Newton.

5. NOTICE OF THE OCCURRENCE OF THE PINK-FOOTED GOOSE, *ANSER PHŒNICOPUS*. BY A. D. BARTLETT.

On the 8th of January 1839 I had the pleasure of introducing to the notice of the Society's Meeting this species for the first time as a new British bird; and although since that period many examples have been from time to time obtained, I am not aware that they have appeared in such large numbers as they now appear. Since the 3rd of this month upwards of a hundred specimens have been seen and examined by me, most of them having been killed in the Eastern Counties. The old males weigh about 6 lbs., the females 5 lbs., and young birds 4½ lbs. The length of the males is about 2 feet 6 inches, the females 2 feet 3 inches, measuring from tip of bill to end of tail. The length of the bill varies from 2¼ inches to 1½ in length. I mention this, as too much importance has been attached to this character (in the Geese), which has led Mr. A. Strickland to regard and describe the old male Bean-Goose as a new and distinct species*. Of this latter bird I here exhibit an *old male* whose bill is upwards of 2¾ inches long. I also exhibit a female Bean Goose, bill 2¼ inches long; this latter is an adult female, having been kept in the Gardens of this Society nearly two years.

* See Ann. and Mag. N. H. ser. 3, vol. iii. p. 121, where the old male Bean-Goose (*Anser segetum*) is described as a new species under the name of the Long-billed Goose (*Anser paludosus*).

6. DESCRIPTIONS OF FORTY-SEVEN NEW SPECIES OF LAND-SHELLS, FROM THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

(Plates II. & III.)

1. *HELIX TROCHISCUS*, Pfr. *T. imperforata, conica, solidula, lævigata, nitidissima, pellucida, cornea; spira convexo-conica; sutura submarginata; anfr. 5½ convexiusculi, ultimus rotundatus, non descendens; apertura subverticalis, lunaris; perist. simplex, rectum, marginibus remotis, columellari brevi, substricto, calloso-subincrassato.*

Diam. maj. 5, min. $4\frac{1}{2}$, alt. $4\frac{1}{4}$ mill.

Hab. Siam (*M. Mouhot*).

2. *HELIX IGNESCENS*, Pfr. (Pl. II. fig. 1). *T. subperforata, globoso-depressa, vitrinoidea, tenuis, striatula et striis impressis spiralibus sub lente decussatula, pellucida, nitidissima, corneo-ignescens; spira parum elevata; anfr. 4½ rapide accrescentes, convexiusculi, ultimus ventrosus, non descendens; apertura fere diagonalis, rotundato-lunaris; perist. simplex, rectum, marginibus vix conniventibus, dextro antrorsum subarcuato, columellari arcuato-declivi, filari, superne anguste reflexo.*

Diam. maj. $27\frac{1}{2}$, min. 23, alt. 15 mill.

Hab. Isle of Batchian, Moluccas (*Mr. Wallace*).

3. *HELIX SUBCORNEA*, Pfr. *T. subclausa perforata, depressa, tenuis, lævigata, albido-cornea; spira vix conoideo-elevata, vertice subtili; sutura filo marginata; anfr. 7½ convexiusculi, ultimus vix latior, basi convexior; apertura verticalis, auriformi-lunaris; perist. simplex, rectum, margine columellari longe declivi, subincrassato.*

Diam. maj. $13\frac{2}{3}$, min. $12\frac{1}{2}$, alt. 6 mill.

Hab. Siam (*M. Mouhot*).

4. *HELIX CÆSIA*, (NANINA) Pfr. *T. perforata, depressa, tenuis, pellucida, corneo-grisea, superne striatula, parum nitens, sub lente lineis spiralibus sculpta, subtus radiato-striata, nitidior; spira breviter conoidea, vertice subtili; sutura levis; anfr. 6 planiusculi, regulariter accrescentes, ultimus medio subcarinatus, basi convexiusculus; apertura obliqua, late lunaris; perist. simplex, rectum, marginibus remotis, columellari declivi, ad insertionem vix dilatato.*

Diam. maj. 17, min. $15\frac{1}{2}$, alt. 8 mill.

Hab. Admiralty Islands.

5. *HELIX FARADENSIS*, Pfr. *T. anguste umbilicata, depresso-turbinata, solidula, superne arcuato-striata, lineisque spiralibus sub lente conspicuis sculpta, lutescenti-cornea; spira conoidea, vertice minuto; anfr. 5 convexiusculi, ultimus latus, rotundatus, subtus radiato-striatus, nitidior; apertura obliqua, rotundato-*

G. B. Sowerby, lith.

Vincent, Brooks, Imp.

1. *Helix ignescens*. 2. *Pythia wallacii*. 3. *Limicolaria turris*.

4. *Helix nodifera*. 5. *H. batchianensis*. 6. *Helix rhyncostoma*.

7. *Clausilia taylori*. 8. *Orthalicus mars*.

G. B. Sowerby, lith

Vincent Brooks, Imp.

1. *Cyclotus batchianensis*. 2. *Simpulopsis cumingi*. 3. *Helix atro-fusca*.
4. *Bulimus hepatostomus*. 5. *Bulimus pan*. 6. *Achatina planti*.
7. *Leptopoma pulicarium*. 8. *Helix expansa*. 9. *Leptopoma globulosum*.
10. *L. decipiens*.

lunaris, intus submargaritacea; perist. simplex, rectum, marginibus vix convergentibus, columellari superne subdilatato.

Diam. maj. 20, min. 17, alt. 12 mill.

Hab. Parada, Mexico (*M. Sallé*).

6. *HELIX CARMELIENSIS*, Pfr. *T. anguste umbilicata, depressa, tenuis, sublævigata, pellucida, cornea, rufo indistincte radiata; spira convexa; anfr. 4½ convexiusculi, lente accrescentes, ultimus rotundatus, non descendens; apertura obliqua, lunaris; perist. simplex, rectum, marginibus distantibus, columellari superne vix dilatato.*

Diam. maj. $3\frac{1}{4}$, min. 3, alt. vix 2 mill.

Hab. Mount Carmel.

7. *HELIX GASSIESI*, Pfr. *T. umbilicata, discoidea, carinata, tenuis, arcuato-striata et lineis impressis obliquis sub lente decussatula, nitida, lutescens, flammis crebris castaneis fulgurata; spira immersa; anfr. 4 convexiusculi, rapide accrescentes, ultimus magnus, utrinque convexior, medio subacutè carinatus; apertura obliqua, subtriangulari-lunaris; perist. simplex, acutum, marginibus conniventibus.*

Diam. maj. $8\frac{1}{3}$, min. $7\frac{1}{3}$, alt. 3 mill.

Hab. Erumanga, New Hebrides (*Mr. Turner*).

8. *HELIX BATCHIANENSIS*, Pfr. (Pl. II. fig. 5). *T. angustissime umbilicata, conoidea, solida, oblique striata, fusca; spira convexo-conoidea, apice acutiuscula; sutura levis, carinato-marginata; anfr. 7, supremi plani, sequentes convexiusculi, ultimus carinatus, non descendens, basi profunde excavatus; apertura diagonalis, rotundato-lunaris; perist. rectum, marginibus distantibus; dextro subsimplici, basali incrassato, ad insertionem flexuose ascendente.*

Diam. maj. $20\frac{1}{2}$, min. $18\frac{1}{2}$, alt. $11\frac{1}{2}$ mill.

β. Major, anfr. 8½, ultimo infra carinam præcedentis recedente.

Diam. $23\frac{1}{3}$, alt. 14 mill.

Hab. Isle of Batchian (*Mr. Wallace*).

9. *HELIX RHYNCHOSTOMA*, Pfr. (Pl. II. fig. 6). *T. anguste umbilicata, trochiformis, acute carinata, tenuiuscula, striatula et sub lente minutissime granulata, carnea, fasciis 2 rufis, altera supera, altera latiore basali ornata; spira conica, obtusiuscula; sutura carinato-marginata; anfr. 6 subplani, lente accrescentes, ultimus antice vix descendens, basi subplanus; apertura perobliqua, subtriangularis; perist. tenue, marginibus distantibus, supero vix expanso, ad dextram in rostrum reflexo, basali breviter reflexo, columellari dilatato, umbilicum occultante.*

Diam. maj. 25, min. vix 22, alt. 17 mill.

Hab. Isle of Batchian (*Mr. Wallace*).

10. *HELIX NODIFERA*, Pfr. (Pl. II. fig. 4). *T. umbilicata, trochiformis, carinata, tenuiuscula, striatula, diaphana, pallide lu-*

tescens; spira conoidea, apice acutiuscula; sutura levis; anfr. 5 convexiusculi, ultimus non descendens, medio acute albo-carinatus, utrinque convexior; apertura diagonalis, subrhombea; perist. late expansum, marginibus subparallelis, columellari supra umbilicum angustum fornicatim reflexo, intus nodulo circumscripto munito.

Diam. maj. 30, min. 24, alt. 18 mill.

Hab. Isle of Batchian (*Mr. Wallace*).

11. *HELIX OCCULTA*, Pfr. *T. anguste umbilicata, globoso-depressa, tenuis, sub lente undique tenuissime granulata, fuscula; spira vix elevata; anfr. 4 convexiusculi, ultimus latus, antice deflexus et subconstrictus, basi ventrosior; apertura magna, obliqua, lunato-ovalis; perist. albo-callosum, marginibus appropinquatis, dextro expanso, basali reflexo, supra umbilicum dilatato.*

Diam. maj. 12, min. 10, alt. 7 mill.

Hab. Aru Islands (*Mr. Wallace*).

12. *HELIX ATROFUSCA*, Pfr. (Pl. III. fig. 3). *T. umbilicata, depressa, tenuiuscula, conferte striata, atro-fusca, fascia unica suturali lutescente ornata; spira conoideo-convexa, vertice corneo; anfr. 4½ convexi, rapide accrescentes, ultimus depresso-rotundatus, antice leviter descendens, circa umbilicum mediocrem excavatus; apertura ampla, diagonalis, lunato-ovalis, intus margaritacea, coloribus perlucetibus; perist. album, late expansum et reflexiusculum, marginibus convergentibus, columellari superne dilatato, tunc intus tuberculo rotundato munito.*

Diam. maj. 32, min. 25, alt. 15 mill.

Hab. Isle of Batchian (*Mr. Wallace*).

13. *HELIX EXPANSA*, Pfr. (Pl. III. fig. 8). *T. umbilicata, depressa, tenuis, striatula, superne vix nitidula, carnea, antrorsum cinnamomea; spira plana, subimmersa; anfr. 4 convexiusculi, rapide accrescentes, ultimus magnus, depresso-rotundatus, antice vix descendens, subtus distinctius striatus, albidus, nitidus, pone aperturam gibboso-inflatus et constrictus; apertura ampla, perobliqua, lunato-circularis; perist. tenue, marginibus convergentibus, dextro horizontaliter abeunte, late expanso, basali reflexo.*

Diam. maj. 22, min. 17½, alt. 10 mill.

Hab. Isle of Batchian (*Mr. Wallace*).

14. *HELIX LEUCOTROPIS*, Pfr. *T. anguste umbilicata, depressa, solidula, conferte striatula, nitidula, carnea; spira breviter conoidea; sutura albo-marginata; anfr. 4½ convexiusculi, ultimus carina compressa, acuta, alba munitus, antice vix descendens, basi convexior; apertura obliqua, subrhombico-lunaris; perist. tenue, marginibus convergentibus, supero breviter expanso, basali reflexo, ad insertionem dilatato.*

Diam. maj. 18, min. 15, alt. 8 mill.

Hab. Aru Islands (*Mr. Wallace*).

15. *STREPTAXIS SINUOSA*, Pfr. *T. profunde arcuato-rimata, oblique oblonga, tenuiuscula, lævigata, nitida, vitreo-albida; spira subconoidea, vertice valde excentrico, minuto; anfr. 5½ convexiusculi, ad suturam striatuli, penultimus gibbosus, ultimus antrorsum aberrans, loco umbilici profunde excavatus; apertura diagonalis, late lunaris, lamina parva linguæformi parietali coarctata; perist. flexuosum, callosum, reflexum, margine dextro superne tenui, sinuoso.*

Diam. maj. $8\frac{1}{2}$, min. $6\frac{1}{3}$, alt. 5 mill.

Hab. Cochin China.

16. *STREPTAXIS EBURNEA*, Pfr. *T. oblique perforata, subglobosa, superne minute striata, eburneo-albida; spira convexo-conica; anfr. 6½ parum convexi, 1½ ultimi antrorsum deviantes, ultimus inflatus, lævigatus; apertura perobliqua, subtriangulari-lunaris, dente linguæformi parietali coarctata; perist. callosum, album, expansum et reflexum, margine supero intus dente 1 acuto munito.*

Diam. maj. 11, min. 9, alt. 7 mill.

Hab. Cochin China.

17. *BULIMUS PAN*, Pfr. (Pl. III. fig. 5). *T. perforata, conico-ovata, solida, lævigata, nitida, alba, fasciis nigro-castaneis ornata; spira conica, sursum fulvicans, apice obtusa; anfr. 5½ planiusculi, ultimus spira brevior, medio carinatus (carina antice evanescente), basi rotundatus; apertura subverticalis, truncato-ovalis; perist. tenue, margine dextro superne sinuato, tum sublate patente, columellari stricte ascendente, fornicatim reflexo.*

Long. 30, diam. 16 mill.

Hab. Philippine Islands.

18. *BULIMUS HEPATOSTOMUS*, Pfr. (Pl. III. fig. 4). *T. perforata, subfusiformi-oblonga, solidula, sublævigata, alba, strigis sparsis fuscis signata; spira conica, acutiuscula; sutura submarginata; anfr. 6 modice convexi, ultimus spiram paulo superans, basi subattenuatus; columella verticalis, stricta; apertura vix obliqua, oblonga, intus hepatica, nitida; perist. album, margine dextro breviter expanso, columellari plano, late reflexo.*

Long. 32, diam. 13 mill.

Hab. Mexico (*M. Boucard*).

19. *BULIMUS IODOSTYLUS*, Pfr. *T. perforata, oblongo-conica, solidula, rugoso-striata et lineis impressis obliquis minute subgranulata, alba subunicolor vel strigis rufis et castaneis irregulariter picta; spira conica, vertice acuto; anfr. 6 convexiusculi, ultimus spiram vix superans, basi subattenuatus; columella substricta, lilacina; apertura parum obliqua, oblonga; perist. breviter expansum, margine columellari sursum dilatato, reflexo.*

Long. 30, diam. 12 mill.

Hab. Mexico (*M. Boucard*).

20. *BULIMUS DEMERARENSIS*, Pfr. *T. perforata, ovato-turrita, solidula, striatula, sub lente indistincte decussatula, opaca, albida, strigis fuscis irregulariter notata; spira elongato-conica, acutiuscula; anfr. 6 parum convexi, ultimus $\frac{1}{3}$ longitudinis superans, subangulatus (angulo antice evanescente); apertura obliqua, truncato-ovalis; perist. breviter expansum, margine columellari arcuato, superne fornicatim reflexo.*

Long. $20\frac{1}{2}$, diam. 10 mill.

Hab. Demerara.

21. *BULIMUS NILOTICUS*, Pfr. *T. subperforata, inflato-ovata, solida, fuscula, saturate castaneo irregulariter radiata; spira brevis, conica, apice acutiuscula; anfr. 6 convexi, summi laevigati, sequentes minute decussati, ultimus fere $\frac{2}{3}$ longitudinis formans, inflatus, subplicatus et lineis remotioribus spiralibus subclathratus; apertura vix obliqua, ovalis, intus margaritacea; perist. roseum, marginibus callo crasso junctis, dextro subincrassato, striato, superne subrepando, columellari crasso, substricto, basi angulum indistinctum cum basali formante.*

Long. 118, diam. 60 mill.

Hab. Ad fontes Nili Albi (Mr. Petherick).

22. *BULIMUS PYRGISCUS*, Pfr. *T. subperforata, turrita, solidula, levissime striata, albida; spira elongata, apice acutiuscula; sutura profunda; anfr. 9 convexiusculi, ultimus $\frac{2}{3}$ longitudinis æquans, basi non attenuatus; columella levissime arcuata; apertura vix obliqua, angulato-ovalis; perist. simplex, rectum, margine columellari breviter reflexo, subadnato.*

Long. 13, diam. 3 mill.

Hab. Sandwich Islands.

23. *BULIMUS DUX*, Pfr. *T. subobtecte perforata, ovato-conica, solida, irregulariter striata, pallide carnea; spira conica, acutiuscula; sutura marginata; anfr. 6 vix convexiusculi, infra suturam striis spiralibus nonnullis distinctis, pluribusque obsoletis sculpti, ultimus spiram paulo superans, subventrosus, basi rotundatus; apertura subverticalis, angulato-ovalis, intus roseo-carnea, nitida; perist. simplex, rectum, marginibus callo roseo nitido junctis, columellari lilacino-roseo, fornicatim reflexo, subadnato.*

Long. 51, diam. 26 mill.

Hab. King George's Sound, Australia.

24. *SPIRAXIS BOUCARDI*, Pfr. *T. ovato-oblonga, tenuis, lævigata, nitida, olivaceo-fusca vel rubello-carnea; spira convexo-conica, obtusula; sutura levis; anfr. 6 planiusculi, ultimus antice descendens, $\frac{1}{4}$ longitudinis formans, basi rotundatus; lamina columellaris funiculata, torta, non truncata; apertura verticalis, anguste sinuato-semiovalis; perist. simplex, margine dextro medio antrorsum subdilato.*

Long. 17, diam. 7 mill.

Hab. Juquila, Mexico (M. Boucard).

25. LIMICOLARIA TURRIS, Pfr. (Pl. II. fig. 3). *T. anguste umbilicata, ovato-turrita, tenuiuscula, conferte striata, striis spiralibus paulo distantioribus granulato-decussata, pallide straminea unicolor vel strigis et flammis rufis variegata; spira turrita, apice obtusula; anfr. 10 modice convexi, ultimus $\frac{5}{12}$ longitudinis subæquans, ad suturam interdum impresso-marginatus et crenatus, juxta umbilicum subcompressus; columella leviter arcuata, cærulescens; apertura subverticalis, oblonga, basi subeffusa, intus margaritacea; perist. simplex, rectum, margine columellari sursum dilatato, fornicatim reflexo.*

Long. 114, diam. 13 mill.

Hab. Ad fontes Nili Albi (Mr. Petherick).

26. ORTHALICUS MARS, Pfr. (Pl. II. fig. 8). *T. imperforata, oblongo-conica, solida, sublævigata, carnea, livido-nebulosa; spira conica, vertice obtuso; sutura crenulata; anfr. 7 modice convexi, medio griseo-violaceo marmorati, ultimus $\frac{2}{3}$ longitudinis subæquans, antice rugoso-striatus; columella nigra, callosa, torta et plicata; apertura obliqua, ovalis, fundo margaritaceo-alba; perist. rectum, obtusum, intus nigro-limbatum, marginibus callo nigro intrante junctis.*

Long. 77, diam. 35 mill.

Hab. In republica Æquatoris (Mr. Fraser).

27. ACHATINA SEMIGRANOSA, Pfr. *T. ovato-turrita, tenuiuscula, lutescens, flammis castaneis fulguratis ornata; spira conica, obtusa; anfr. 7 modice convexi, superiores distincte seriatim granulati, ultimus spiram subæquans, infra medium minutissime decussatus, seriebus granulorum destitutus; columella alba, parum torta, late truncata; apertura vir obliqua, angulato-subelliptica; perist. simplex, acutum.*

Long. 77, diam. 34 mill.

Hab. Cape Natal (Mr. Plant).

28. ACHATINA PLANTI, Pfr. (Pl. III. fig. 6). *T. turrito-oblonga, solidula, carneo-albida, fuscula et castaneo irregulariter maculata et flammata; spira ovato-conica, apice rotundata; sutura subcrenata; anfr. 9 convexiusculi, summi minute granulato-decussati, 2 ultimi prope suturam granulati, tum subdistanter plicatuli, ultimus spira brevior, basi subattenuatus; columella levissime recedens, basi oblique truncata; apertura obliqua, angulato-ovalis; perist. simplex, rectum, marginibus callo saturate castaneo, introrsum diffuso, junctis.*

Long. 134, diam. 47 mill.

Hab. Cape Natal (Mr. Plant).

29. ACHATINA FOXCROFTI, Pfr. *T. cylindrico-turrita, solidula, irregulariter striatula, sub epidermide cornea decidua albida; spira superne turrita, apice obtusa, tum cylindræa; sutura subcrenulata; anfr. 12 $\frac{1}{2}$ convexiusculi, ultimus $\frac{1}{3}$ longitudinis vir æquans, basi rotundatus; columella antrorsum arcuata, di-*

stincte et anguste truncata; apertura obliqua, ovalis; perist. simplex, rectum.

Long. 35, diam. $6\frac{1}{2}$ mill.

Hab. Sierra Leone (*Mr. Foxcroft*).

30. *OLEACINA MULTISPIRA*, Pfr. *T. ovato-turrita, tenuis, striatula, nitida, cornea, strigis indistinctis pallidis irregulariter notata; spira convexiusculo-turrita, apice acuta; sutura crenulato-marginata; anfr. 10 planiusculi, infra suturam plicatuli, ultimus spira brevior, basi rotundatus; columella brevis, ad basin aperturae oblique truncata; apertura subverticalis, sinuato-semiovalis; perist. simplex, margine dextro fere angulatim antrorsum dilatato.*

Long. 25, diam. $9\frac{2}{3}$ mill.

Hab. Juquila, Mexico (*M. Boucard*).

31. *OLEACINA TURGIDA*, Pfr. *T. subfusiformi-ovata, solidiuscula, leviter et conferte striata, parum nitida, isabellina; spira conica, apice obtusa; sutura levissime crenulata; anfr. 7 turgidi, summi lævigati, ultimus spira paulo brevior, basi attenuatus; columella stricta, abrupte truncata; apertura verticalis, sinuato-semiovalis, intus rubella; perist. simplex, acutum.*

Long. 30, diam. 12 mill.

Hab. Juquila, Mexico (*M. Boucard*).

32. *OLEACINA CONFERTA*, Pfr. *T. oblongo-ovata, tenuiuscula, conferte plicato-striata, pellucida, nitida, cerea; spira conica, obtusula; sutura submarginata; anfr. 8 convexiusculi, ultimus spiram vix superans; columella arcuata, basi late truncata; apertura subverticalis, acuminato-semiovalis; perist. simplex, margine dextro leviter antrorsum arcuato.*

Long. 25, diam. 10 mill.

Hab. Juquila, Mexico (*M. Boucard*).

33. *OLEACINA SACCATA*, Pfr. *T. ovato-oblonga, solidiuscula, fusco-cornea; spira convexo-conica, apice acutiuscula; sutura filo marginata et conferte granulata; anfr. $6\frac{1}{2}$ convexiusculi, superiores plicato-striati et lineis minutissimis spiralibus decussati, ultimus spira brevior, infra suturam modo plicatulus et decussatus, tum lævigatus, basi saccatus; columella brevis, sub torta, late truncata; apertura subverticalis, sinuato-ovalis, intus margaritacea; perist. simplex, margine dextro antrorsum subdilatato.*

Long. 56, diam. 24 mill.

Hab. In republica Æquatoriali (*Mr. Fraser*).

34. *OLEACINA DECIDUA*, Pfr. *T. fusiformis, tenuis, striatula, lineis impressis spiralibus sub lente decussatula, nitida, albidæ, epidermide griseo-cornea, strigatim decidua variegata; spira conica, obtusa; sutura vix marginata; anfr. 6 convexiusculi, ultimus spiram subæquans, basi attenuatus; columella leviter*

arcuata, oblique truncata; apertura parum obliqua, subsemi-ovalis; perist. simplex, margine dextro regulariter arcuato.
 Long. 28, diam. 11 mill.
Hab. Juquila, Mexico (*M. Boucard*).

35. *CYLINDRELLA MICROSTOMA*, Pfr. *T. subperforata, cylindracea, lævigata, cretacea; spira sursum dilatata, in conum brevem acutiusculum desinens; sutura impressa; anfr. 18 subplani, æquales, summi plicatuli, ultimus striatus, antice solutus, dorso carinatus, basi angulatus, angulo antrorsum evanescente; apertura parvula, verticalis, subtriangularis; perist. undique breviter expansum.*
 Long. 15½, diam. 5 mill.
Hab. — ?

36. *CLAUSILIA OBESA*, Pfr. *T. arcuato-rimata, ventroso-fusiformis, solidula, conferte striata, sericina, corneo-albida; spira ventrosa, apice acutiuscula; sutura simplex; anfr. 10 convexiusculi, ultimus pone aperturam crista obtusa valida munitus; apertura subverticalis, piriformi-rotundata; lamellæ mediocres, convergentes; lunella arcuata; plica palatalis 1 supera, subcolumellaris conspicua; perist. continuum, superne breviter solutum, intus albo-callosum.*
 Long. 14, diam. 4⅔ mill.
Hab. In Dalmatia.

37. *CLAUSILIA (BALEA?) TAYLORI*, Pfr. (Pl. II. fig. 7). *T. profunde rimata, turrita, solidula, conferte plicato-striata, corneo-albida; spira regulariter attenuata, apice acutiuscula; sutura simplex; anfr. 11 convexiusculi, ultimus basi vix attenuatus, infra medium obtuse carinatus, antice solutus, descendens et dorso acute carinatus; apertura magna, obliqua, intus semicircularis; lamellæ obsoletæ; plicæ nullæ; perist. continuum, undique late expansum.*
 Long. 47, diam. 8½ mill.
Localitas ignota.

38. *SIMPULOPSIS CUMINGI*, Pfr. (Pl. III. fig. 2). *T. subglobosa, tenuissima, leviter et irregulariter plicatula, pellucida, vix nitida, virenti-cornea; spira minuta, in papillam minimam desinens; anfr. 3, ultimus perinflatus; columella regulariter arcuata, simplex; apertura obliqua, rotundato-ovalis, intus nitidissima; perist. simplex, expansiusculum.*
 Diam. maj. 20½, min. 19½, alt. 12 mill.
Hab. Mexico.

39. *SIMPULOPSIS ÆNEA*, Pfr. *T. conico-globosa, tenuis, confertissime striata, pellucida, æneo-micans, olivaceo-cornea; spira brevis, conica; anfr. 2½, superus convexus, ultimus inflatus; apertura diagonalis, ovalis, intus nitidior; columella filaris;*

perist. simplex, rectum, marginibus callo tenuissimo albido junctis.

Diam. maj. 9, min. 8, alt. $5\frac{1}{2}$ mill.

Hab. La Parada, Mexico (*M. Sallé*).

40. *SUCCINEA SCALARINA*, Pfr. *T. ovato-conica, scalarina, solidiuscula, irregulariter rugoso-plicata, nitidula, rubella; spira elongata, acutiuscula; anfr. $3\frac{1}{2}$ convexi, ultimus spiram paulo superans, basi subattenuatus; columella substrictè recedens, cum perist. angulum indistinctum formans; apertura obliqua, ovalis, superne vix angulata; perist. simplex, margine columellari superne reflexiusculo.*

Long. 13, diam. $7\frac{1}{2}$, alt. $5\frac{1}{3}$ mill.

Hab. King George's Sound, Australia.

41. *PYTHIA WALLACII*, Pfr. (Pl. II. fig. 2). *T. imperforata, compresse ovato-acuminata, solidiuscula, leviter striata, lutescens, punctis castaneis dense conspersa vel subunicolor castanea; spira conica, acuminata, lateribus angulata, varicibus pallidis; sutura levis, indistincta; anfr. 9-10 planiusculi, ultimus $\frac{3}{5}$ longitudinis fere formans; apertura vix obliqua, angustissima; plicæ parietales 3, suprema verticaliter descendens, angulatim retroflexa, secunda magna, linguæformis, tertia minuta, illi parallela; plica columellaris valida, torta, subadscendens; perist. callo dentifero munitum (dentibus 2 majoribus, tertio minuto), superne simplex, tum expansum et tenuiter reflexum.*

Long. 23, diam. maj. 14, min. 10 mill.

Hab. Isle of Batchian (*Mr. Wallace*).

42. *CYCLOTUS SUBFLAMMULATUS*, Pfr. *T. umbilicata, turbinate-depressa, tenuiuscula, striatula, nitida, lutescens; spira breviter conoidea; anfr. 4 modice convexi, supremi pallide rufo-flammulati, ultimus depresso-rotundatus, non descendens; umbilicus conicus, $\frac{1}{2}$ diametri vix superans; apertura vix obliqua, subcircularis, intus margaritacea; perist. duplex, internum vix porrectum, externum patens, superne productum, latere columellari angusto.*

Diam. maj. 17, alt. $8\frac{1}{2}$ mill.

Hab. Isle of Batchian (*Mr. Wallace*).

43. *CYCLOTUS BATCHIANENSIS*, Pfr. (Pl. III. fig. 1). *T. late umbilicata, subdiscoidea, solida, oblique striatula et superne liris spiralibus obsoletis notata, saturate fusca; spira vix prominula; anfr. 4 convexiusculi, supremi pallide flammulati, ultimus depresso-rotundatus, antice descendens; apertura diagonalis, subangulato-rotunda; perist. duplex, internum continuum, subadnatum, latere dextro dilatatum, externum album, concentricè striatum, superne valde productum, juxta anfr. contiguum subcompressum, latere dextro et basali expansis, columellari angusto.*

Diam. 23, alt. $8\frac{1}{2}$ mill.

Hab. Isle of Batchian (*Mr. Wallace*).

44. *CYCLOPHORUS PAPILIO*, Pfr. *T. sublate umbilicata, convexo-depressa, solida, striata, alba, maculis castaneis sagittaeformibus et fascia subcontinua infra peripheriam ornata; spira convexa, obtusula; sutura distincte filomarginata; anfr. 5 convexi, ultimus basi albus; apertura fere diagonalis, subcircularis; perist. duplex: internum continuum, breviter adnatum, externum superne dilatatum et subinflexum, latere dextro et sinistro patens.*

Diam. maj. 25, min. 20, alt. 13 mill.

Localitas ignota.

45. *LEPTOPOMA PULICARIUM*, Pfr. (Pl. III. fig. 7). *T. perforata, globoso-turbinata, tenuiuscula, striis spiralibus confertissimis undulatis sculpta, carnea, punctis rufulis (interdum fulguratim confluentibus) dense conspersa; spira turbinata, apice acutiuscula, cornea; anfr. 5 convexi, ultimus inflatus; apertura obliqua, ovali-subcircularis; perist. album, tenue, breviter subinterruptum, margine dextro æqualiter patente, sinistro medio dilatato, reflexo.*

Diam. maj. 15, min. 12, alt. 12 mill.

Hab. Isle of Batchian (Mr. Wallace).

46. *LEPTOPOMA GLOBULOSUM*, Pfr. (Pl. III. fig. 9). *T. perforata, conico-globosa, tenuiuscula, striis spiralibus confertissimis sculpta, albida, seriebus nonnullis macularum fuscicarum cincta; spira turbinata, acutiuscula; anfr. 4½ convexi, ultimus valde inflatus; apertura parum obliqua, multo altior quam lata; perist. album, vix interruptum, margine dextro æqualiter patente, sinistro medio subdilatato, reflexo.*

Diam. maj. 13½, min. 11¼, alt. 10¼ mill.

β. *Albidum, maculis magnis castaneis irregulariter pictum, liris nonnullis filaribus superne sculptum.*

Hab. Isle of Batchian (Mr. Wallace).

47. *LEPTOPOMA DECIPIENS*, Pfr. (Pl. III. fig. 10). *T. perforata, globoso-conica, subcarinata, tenuiuscula, sub epidermide olivaceo-fusca squamosa albida, nitida; spira elevato-conica, apice acutiuscula, aurantiaca; anfr. 6 convexiusculi, oblique striati et liris filiformibus subremotis cincti; apertura diagonalis, lunato-ovalis; perist. album, interruptum, margine dextro descendente, patente, sinistro superne sinuato, tum vix dilatato.*

Diam. maj. 11½, min. 10, alt. 10 mill.

Hab. Isle of Batchian (Mr. Wallace).