

VIVARIUM NATURE. OF the NATURALIST'S MISCELLANY.

VOL. I.
DEDICATED
BY PERMISSION
TO
HER MAJESTY



BY G. SHAW, M.D. F.R.S. the FIGURES by E. P. NODDER, BOTANIC PAINTER to HER MAJESTY.

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VIVARIUM NATURÆ,

SIVE

RERUM NATURALIUM,

VARIÆ ET VIVIDÆ ICONES,

A D

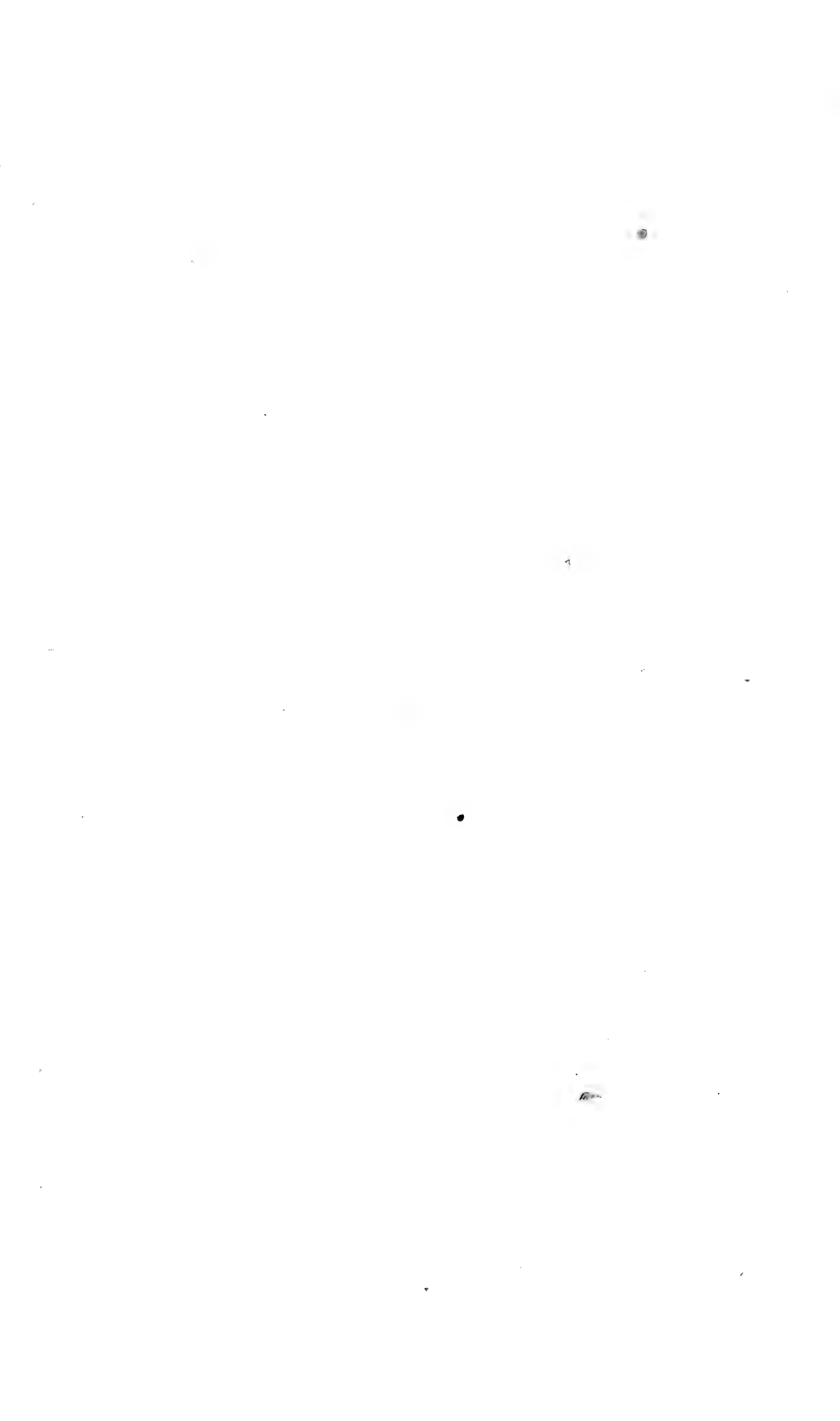
IPSAM NATURAM.

DEPICTÆ

ET

DESCRIPTÆ.

T H E
N A T U R A L I S T ' S
M I S C E L L A N Y :
O R,
C O L O U R E D F I G U R E S
O F
N A T U R A L O B J E C T S ;
D R A W N A N D D E S C R I B E D
I M M E D I A T E L Y
F R O M
N A T U R E .





AUGUSTISSIMÆ CELSISSIMÆQUE

C A R O L E T T Æ,

BRITANNIARUM REGINÆ,

VIRTUTIBUS PRÆCELLENTISSIMÆ,

ARTIUM ELEGANTIARUM

JUDICI, FAUTRICI SUMMÆ,

H U N C P R I M U M

NATURÆ VIVARII

F A S C I C U L U M

CULTU OMNI ET OBSEQUIO

D. D. D.

GEORGIUS SHAW,

FREDERICUS P. NODDER.

TO THE
MOST ILLUSTRIOUS PRINCESS,
CHARLOTTE,
QUEEN OF GREAT BRITAIN,
NOT LESS DISTINGUISHED BY
HER VIRTUES
THAN
HER STATION,
THIS FIRST VOLUME
OF THE
NATURALIST'S MISCELLANY
IS
WITH PROFOUND HUMILITY INSCRIBED
BY
HER MAJESTY'S MOST DEVOTED
AND
MOST OBEDIENT SUBJECTS AND SERVANTS,
GEORGE SHAW,
FREDERICK P. NODDER.



PSITTACUS PORPHYROCEPHALUS.



CHARACTER GENERICUS.

Rostrum aduncum: mandibula superiore mobili, cera instructa.

Nares in rostri basi.

Lingua carnosa, obtusa, integra.

Pedes scanforii.

Lin. Syst. Nat. p. 139.

CHARACTER SPECIFICUS.

PSITTACUS submacrourus viridis, vertice subcristato, purpureo-cæruleo, gula rubra.

Inter numerosas hujus generis species vix extat avicula aut forma elegantior, aut coloribus pulchrior. Insulas incolit australes modo exploratas, nuperis navigiis inde ad nos advecta. Interdum fit ut differat paulum colore alia ab alia: ut nempe in nonnullis sint femora viridia, in nonnullis purpurea. Interdum etiam pectus aliquid fusci coloris exhibet. Hæ differentię fortasse vel sexus discrimina indicant, vel a juniore aut proveciori ætate oriuntur.

T H E
PURPLE - HEADED PARRAKEET.



GENERIC CHARACTER.

Bill hooked. Upper mandible moveable.

Nostrils round, placed in the base of the bill.

Tongue fleshy, broad, blunt at the end.

Legs short. Toes formed for climbing, viz. two backward and two forward.

Linnaeus and Pennant.

SPECIFIC CHARACTER.

GREEN PARRAKEET, with the tail rather elongated; crown slightly crested, and of a purplish blue; throat red.

BLUE-CRESTED PARRAKEET.

Latham's Synopsis of Birds. vol. I. p. 254.

Of the extensive genus to which this bird belongs, there hardly exists a more beautiful species, either in point of shape or colour. It is a native of the newly-discovered Islands in the South-Sea, and is one of the numerous acquisitions with which Natural History has been enriched by the late Voyages to the Southern Hemisphere. It is subject to some variety as to colour, the thighs in some being green, and in others purple: the breast also is sometimes of a dusky tinge. These are probably either sexual differences, or else may be owing to a more or less advanced state of age.



Mathias Schlegel's 'Gardiner's' (1841)

(from 'The Birds of the World')

PHALÆNA ATLAS.



CHARACTER GENERICUS.

Antennæ fetaceæ, a basi ad apicem sensim attenuatæ.

Alæ, sedentis, sæpius deflexæ. (*Volatu nocturno.*)

Lin. Syst. Nat. p. 808.

CHARACTER SPECIFICUS.

PHALÆNA pectinicornis elinguis, alis falcatis, concoloribus luteo-variis, macula fenestrata: superioribus sesqui-altera.

Lin. Syst. Nat. p. 808.

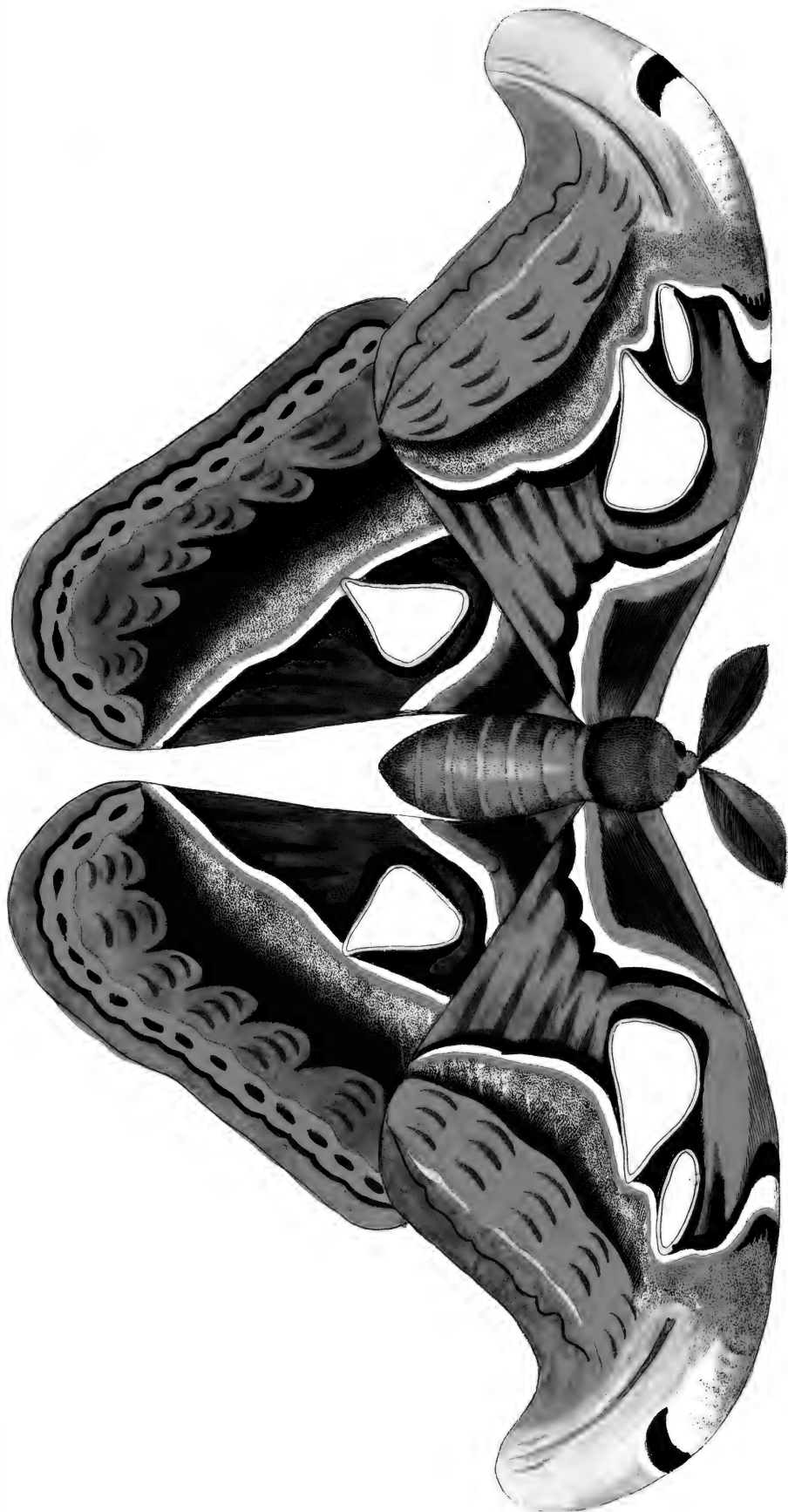
Phalæna, in hac tabula depicta, est omnium phalænarum hætenus cognitarum maxima: omnium etiam, testante Linnæo ipso, speciosissima. Historiæ naturalis cultoribus jamdudum est cognita, et a Domina Merian in *Historia Insectorum Surinamensium* depicta: quæ tamen eximiam ipsius insecti venustatem et varios colores in tabula minus feliciter exprimit. Eruca, notabilis hujus insecti mater, prægrandis est, colore viridi, et tuberculis flavis annulata. Appropinquante ejus in chrysalidem metamorphosi, telam ferici subflavi de suo ipsius glutine deducit, in qua cubat, durante chrysalidos statu. Erucæ hæ in China, et aliis Orientis regionibus, nec-non in America calidiori frequenter reperiuntur: et quandoquidem ter quolibet in anno producuntur, fericum

ricum illinc ortum commercii non parvi æstimandi fieri possit fundamentum; firmissimum enim hoc fericum firmul ac elegantissimum habetur. Opinionem hanc jam olim vulgavit Domina Merian.

Vide Insect. Surin. tab. 52.

Vescitur hæc Eruca præcipue foliis citri.

Phalænæ non mediocrem pulchritudinem afferunt antennæ suæ: finguli enim antennarum articuli radiis quatuor, seu duobus utrinque se diducentibus instructi sunt, ita ut duplices appareant.



THE
A T L A S M O T H.



GENERIC CHARACTER,

The *Antennæ* or *Horns* setaceous, decreasing in size from the base to the point.

The *Wings*, when at rest, generally deflected.

Flight, generally nocturnal.

SPECIFIC CHARACTER.

MOTH with sub-falcated Wings, varied with different shades of ferruginous and orange; with a large transparent spot on each, and a smaller contiguous spot on the upper wings. Colour of both the surfaces nearly the same.

The Moth figured in this plate is the largest species of *Phalæna*, hitherto discovered; it must be unnecessary to add, that it is one of the most beautiful. Linnæus, in the *Systema Naturæ*, calls it *Speciosissima Phalænarum*. It has been long known to naturalists, and has been figured by Madam Merian, amongst the insects of Surinam. The figure, however, which she has given, does not by any means do justice to the uncommon elegance of the insect itself. The Caterpillar from which this remarkable Moth is produced, is very large, of a green colour, and surrounded by rings of yellow

T H E
P Y G M Y M U S K.



GENERIC CHARACTER.

No *Horns*.

Two long *Tusks* in the upper jaw.

Eight small cutting *Teeth* in the lower jaw, none
in the upper.

Linnæus and Pennant.

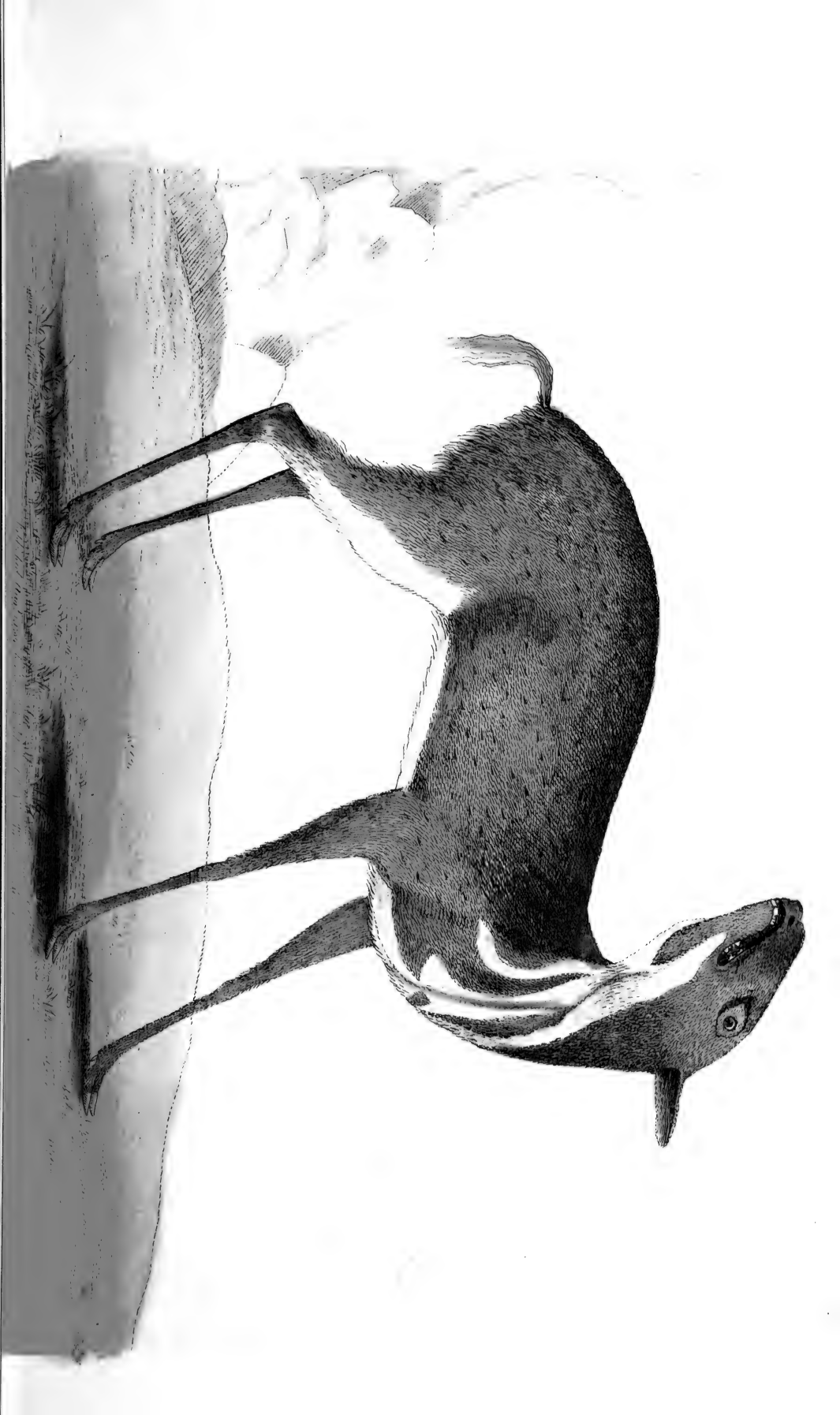
SPECIFIC CHARACTER.

MUSK with legs of smaller diameter than the
human finger.

GUINEA MUSK.

Pennant. Hist. Quadr. p. 115.

This elegant little creature is one of the smallest of the hoofed quadrupeds, being seldom more than about 9 Inches in length; or about the size of a small cat. It abounds in several parts of the East-Indies, and is common in the island of Java. It is an animal of a very agile and lively disposition. At first view one would not be inclined to rank this creature in the genus *Moschus* or *Musk*. Yet, since both *Linnæus* and *Mr. Pennant* have agreed in so doing, we shall not object to its being thus placed. The tusks in the upper jaw are, however, very short, so that it does not shew, in a striking manner, that particular of its generic character. This little species is generally of a tawny colour above, and white below; but the individual specimen, from which this figure was taken (and which is now in the *Leverian Museum*), is streaked in a remarkable manner on the neck with white.



TANAGRA TATAO.



CHARACTER GENERICUS.

Rostrum conicum, acuminatum, emarginatum,
basi subtrigonum, apice declive.

Lin. Syst. Nat. p. 313.

CHARACTER SPECIFICUS.

TANAGRA violacea, dorso nigro, uropygio fulvo, capite viridi, pectore alisque violaceis.

Lin. Syst. Nat. p. 315.

Nescio an hac plumas habeat aliqua avis splendidiores. Possunt fane Trochili, aliarumque nonnullarum colores, figillatim inspecti magis nitescere; vix tamen alii avi obtigit tanta lucidarum plumarum varietas. Guianum incolit in America Australi pulcherrima hæc avicula. Fæminæ et pullis pallidior est color; fit etiam interdum ut avis adulta differat paulum colore alia ab alia. Cantu plane caret; quod illi cum multis aliis regionibus calidioribus commune est: dicamus igitur cum elegantissimo fabularum scriptore, '*Si vocem haberes nulla prior ales foret.*'

THE
PARADISE TANAGRA.



GENERIC CHARACTER.

Bill conical, acuminated, a little inclining towards the point, upper mandible slightly ridged, and notched near the end.

Linnaeus and *Pennant*.---Class, *Passeres*.

SPECIFIC CHARACTER.

VIOLACEOUS TANAGRA, with the back black, the rump orange, head green, breast and wings violet-blue.

Lin. Syst. Nat. p.

Le SEPTICOLOR.

Buff. Ois. vol. IV. p. 279. pl. 13.

TITMOUSE OF PARADISE.

Edw. pl. 349.

It may be doubted whether in the whole feathered tribe there exists a bird of gayer plumage than this. In the Humming-birds and some others, there are indeed still more vivid hues, if singly considered; but scarce any bird yet known displays such a combination of lively colours. This splendid little creature is an inhabitant of Guiana in South America. The female is somewhat less brilliant in colour, as is also the case with



Cardinalis rubra var. leucosticta (P. L. S. 18. *Cardinalis rubra*.)

with those which have not yet attained their full age; it likewise happens that some flight varieties occasionally take place in the colours of the full-grown birds. Like many of the gay birds of the hotter climates, it is destitute of song. In the words of the elegant fabulist, we may apply to it, '*Si vocem haberes, nulla prior ales foret.*'

‘servatrix suis armis, horrentibus execrabili veneno,
‘pessimorum pessimo, in diversis diverso. Ne vero hi
‘spoliati miseri que armis quæ ipsis superessent nimium
‘sævirent, decimam quamque tantum speciem armavit
‘imperans, sed versipelles eos voluit, ut dubii omnes
‘metuerentur ab omnibus.’



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THE
PAINTED SNAKE.



GENERIC CHARACTER,

Body covered with uniform scales, or those on the belly and beneath the tail, not differing in shape from the rest.

SPECIFIC CHARACTER.

SNAKE with about 240 scales along the belly, and 13 beneath the tail. General colour black and orange; sometimes black and white, &c.

The Serpent figured on this plate, besides being distinguished by the beauty of its colours, is perfectly harmless. It is common in South America, where it resides in woods, and preys upon various insects, &c. It is said to be particularly fond of Scolopendræ, or centipedes, which in those regions are uncommonly numerous and large. It is sometimes found entirely black and white, and sometimes pale rose-colour and black: but the most elegant state in which it appears is that of a bright orange-red; much paler or yellowish white on the belly, and beautifully fasciated all over with bars of the deepest black. One of the most singular properties
of

of the serpent tribe, is that of casting their skins at certain periods, and appearing in a state of superior beauty in point of colour than before. This is one of the principal causes of that difficulty which obtains amongst Naturalists of determining the species; since one and the same animal may vary extremely in colour at different seasons, and therefore be mistaken for a different species. Linnæus gives a very good and probable reason for this, *viz.* 'That since the Author of Nature has armed many of the serpent tribe with a dreadful poison, He has ordained that all should cast their skins, in order to inspire a necessary universal caution and suspicion of the whole tribe.'

BRADYPUS TRIDACTYLUS.



CHARACTER GENERICUS.

Dentes primores nulli utrinque.

Laniarii obtusi, solitarii, molaribus longiores, occurrantes.

Molares utrinque 5, obtusi.

Corpus pilis tectum.

Lin. Syst. Nat. p. 50.

CHARACTER SPECIFICUS.

BRADYPUS pedibus tridactylis, cauda brevi.

Lin. Syst. Nat. p. 50.

Hoc animali vix aliud aspectu deformius et inelegantius potest excogitari. Species ita in tabula depicta, in America Australi nascitur; sedem sibi quærens in desertissimis locis, ubi otium turbare nec possint homines aut alia animantia. Negat celeberrimus Naturæ scrutator Buffonius reperiri posse aliquid in hoc animali quod mundani systematis vel usui vel decori inserviat; clamitans monstrum esse informe, sine arte et consilio factum, et ad solas ærumnas aptum. Nec mirum, ait ille; magna enim pars hominum vix fato meliore gaudet. Pace tamen tanti viri, (qui sæpe seria cum ludicris permiscet) liceat mihi dicere hoc ipsum animal tam vile, tam visu fœdum, pro suis vitæ moribus suisque propriis

priis amœnitatibus non minus apte et idonee formari, quam alia animantia, queis melior forma et ingenium vividius obtigerint. Fructibus præcipue vescitur Bradypus; sed et folia ipsa lubenter comedit. Motu incedit languido et tardissimo. Vocem emittere dicitur tam ultra fidem singularem, tam miseranter ejulantem, vultu simul adeo lachrymoso, ut audientium misericordiam et fastidium commoveat. Insolitum hunc clamorem, (a natura, ut credere par est pro defensione datum) simul ac audierint alia animalia, terrore percita in fugam se recipiunt. Nec tamen vox et præterea nihil, quo se defendat data est; adeo enim robore præpollet Bradypus, ut canem, unguibus suis prehensum, vehementer renitentem, et omni vi evadere conantem mordicus retineat, donec ipsa fame consumptum miserit. Tantam enim ipse tolerare potest abstinentiam, ut trunco appensus, sine esca aut potu, per mensem integrum duraverit, vix tandem fame et languore consumptus. Patet hoc a mirando Kircheri experimento.

Alia exstat Bradypi species; huic valde similis; cui tamen pedes anteriores duobus tantum unguibus muniti sunt.



Pub. & Sept. 1. 1789 by F. P. Nodder

& Co. N. 13. Panten Street.

THE THREE-TOED SLOTH.



GENERIC CHARACTER.

No *Cutting-Teeth* in either Jaw.

Canine Teeth obtuse, single, longer than the grinders, placed opposite.

Grinders five on each side, obtuse.

Fore-Legs much longer than the hind.

Claws very long. [Linnæus and Pennant.

SPECIFIC CHARACTER.

SLOTH, with three toes on each foot, and a very short tail; size of a smallish dog.

THREE-TOED SLOTH.

Pennant. Hist. Quadr. p. 494.

L'AI. [*Buffon. vol. XIII. p. 34. tab. 5. 6.*

So extraordinary is the union of awkwardness and ugliness in this uncommon creature, that it has generally been regarded as one of the most striking examples of animal deformity. The species here exhibited, is a native of South America, where it resides in solitary places, and where its quietude is least liable to be disturbed by Man or other animals. A celebrated Naturalist, the Count de BUFFON, will not allow this creature to have any share in contributing to the general beauty in the chain of beings, but regards it as an ill-constructed mass of deformity, created only for misery, which he
thinks

thinks is the less to be wondered at, when perhaps the major part of mankind experience the same fate. With submission, however, to this lively Naturalist, I should not hesitate to believe that the Sloth, notwithstanding this appearance of wretchedness and deformity, is as well fashioned for its proper modes and habits of life, and feels as much happiness in its solitary and obscure retreats, as the rest of the animal world of greater locomotive powers and superior external elegance.

The Sloth feeds chiefly on fruit: it will even feed on the leaves of trees; and it is of all animals the most languid in its motions. Its voice is said to be so inconceivably singular, and of such a mournful melancholy, attended at the same time with such a misery of aspect, that it excites at once a mixture of pity and disgust; and that the animal makes use of this natural yell as its best mode of defence; since other creatures are frightened away by the uncommon sound. This is, however, far from being its only refuge; for so great is the share of muscular strength which it possesses, that it is capable of seizing a dog with its claws, and holding it, in spite of all its efforts to escape, 'till it perishes with hunger; for the Sloth itself is so well calculated for supporting abstinence, that the celebrated Kircher assures us of its power in this respect having been exemplified by the very singular experiment of suffering one which had fastened itself to a pole, to remain in that situation, without any sustenance, 'till it perished through fatigue and famine; which did not happen 'till more than the space of a whole month.

There is another species of Sloth which has the same general appearance with the species here figured, but is furnished with only two toes to the fore-feet.

PSITTACUS PORPHYRIO.



CHARACTER GENERICUS.

Rostrum aduncum : mandibula superiore mobili,
cera instructa.

Nares in rostri basi.

Lingua carnosæ, obtusa, integra.

Pedes scanforii.

Lin. Syst. Nat.

CHARACTER SPECIFICUS.

PSITTACUS submacrourus, violaceo-cyaneus,
capite subcristato, gula albida.

Perexigua hæc Psittaci species inter elegantissimas sui generis merito locum obtinet. Color illi est admodum violaceus, gula pectorisque parte superiori exceptis, quæ albicant, in quibusdam speciminibus subfusco obumbrata. Rostrum pedesque rubescunt. Capitis plumæ fere in cristam sunt productæ, ut in Psittaco Porphyrocephalo in Numero primo hujus operis expresso. Huic aviculæ singulare quoddam est, (quod et Lathamium in Synopsi Avium non effugit,) lingua nempe quæ generi obtusa et brevis est, in hac specie longa est, et fasciculo, seu penicillo setularum albarum terminata. Insulam Otaheitee, in Oceano Australi, incolit hæc species.

T H E
VIOLET-BLUE PARRAKEET.



GENERIC CHARACTER.

Bill hooked. Upper mandible moveable.
Tongue broad, fleshy, and obtuse.
Legs rather short. Toes formed for climbing,
viz. two forward and two backward.

SPECIFIC CHARACTER.

VIOLET-BLUE PARRAKEET, with the tail
somewhat elongated; head rather crested;
throat white. Length about 5 Inches, or
somewhat more.

OTAHEITAN BLUE PARRAKEET.

Latham. Synopf. p. 59.

N. B. This bird and the *Pfittacus Porphyrocephalus* figured in
the First Number of *this* work, are very nearly of the same
size and proportion.

This diminutive species is one of the most elegant
of its tribe. Its colour is a beautiful deep violet, ex-
cept on the throat and upper part of the breast, where
it is white; but in some specimens slightly tinged with
dusky.

Pl. *Quercus agrifolia* L. 1848. 2. 4. 4. 4. 4. 4.



dusky. The bill and legs are reddish, and the feathers on the head are elongated, so as to form a slight crest, in the same manner as in the *Pfittacus Porphyrocephalus*, described in the First Number of this work.

A very curious circumstance relative to this little bird, has been observed by Mr. Latham in his *Synopsis of Birds* ; viz. that the tongue, which in the rest of the genus is blunt and short, is in this species long, and terminated by a sort of pencil of short white bristles.

It is a native of the Island of Otaheitee in the Southern Hemisphere.

DRACO VOLANS.



CHARACTER GENERICUS.

Corpus tetrapodum, caudatum, alatum; alis propriis.

Lin. Syst. Nat. p. 358.

CHARACTER SPECIFICUS.

DRACO brachiis ab ala distinctis.

Lin. Syst. Nat. p. 358.

Simile est Lacertis hoc animalculum nisi quod membranam habeat lateralem, radiis quibusdam offeis firmatam, et quam ad arbitrium vel complicare vel explicare potest. Hinc Lacerta volans non inepte nominari posset. Celeberrimus tamen Linnæus, in Systemate Naturæ, genus illi distinctum nomine Draconis dedit.

Africæ indigena est, et ut aliæ minores Lacertæ, inter arbores vagatur, more sciuri volantis, ope membranæ suæ lateralis saliens; an volitans potius dicam? Aliarum lacertarum more insectis vescitur, quæ (ut verisimile mihi visum est) facculo quem habet in gula, ingerit, postea pro arbitrio, et per otium comedenda.

Tegitur undique Draco volans squamis parvulis, et plerumque est coloris subcinerei, fusco alboque plus minus vivide dorsum et alas variatus.



A

T H E
F L Y I N G D R A G O N .



GENERIC CHARACTER.

Body four-footed, tailed, and winged;

SPECIFIC CHARACTER.

DRAGON with the fore-legs unconnected with the wings.

It is merely in being furnished with a lateral expanded membrane, strengthened by a few radii, or bony processes, that this animal differs from the Lizard tribe; so that it might, without impropriety, be named the Flying Lizard. Linnæus however, in his celebrated work, the *Systema Naturæ*, has instituted a distinct genus for it, under the title of *Draco* or *Dragon*.

This animal is an inhabitant of Africa, and like many other of the smaller Lizards, delights in wandering about trees, and from the peculiar mechanism of its lateral membranes, is enabled to spring from bough to bough, and support itself in air for a moment or two, in the manner of a flying Squirrel. Like other Lizards, it feeds on insects, and it is not improbable that the remarkable gular pouch with which it is furnished, may be a provision of Nature, for retaining for some time, a number of small insects which it may collect, to be afterwards swallowed more at leisure.

This

This animal is covered with very small scales, and is generally of an ash-colour, varied and clouded on the back and wings with brown and whitish; which variations in the different specimens of the animal are more or less deep.

SCOLOPENDRA MORSITANS.



CHARACTER GENERICUS.

Pedes numerosi, totidem utrinque quot corporis segmenta.

Antennæ setaceæ.

Palpi duo, articulati.

Corpus depressum.

Lin. Syst. Nat. p. 1062.

CHARACTER SPECIFICUS.

SCOLOPENDRA pedibus utrinque 20.

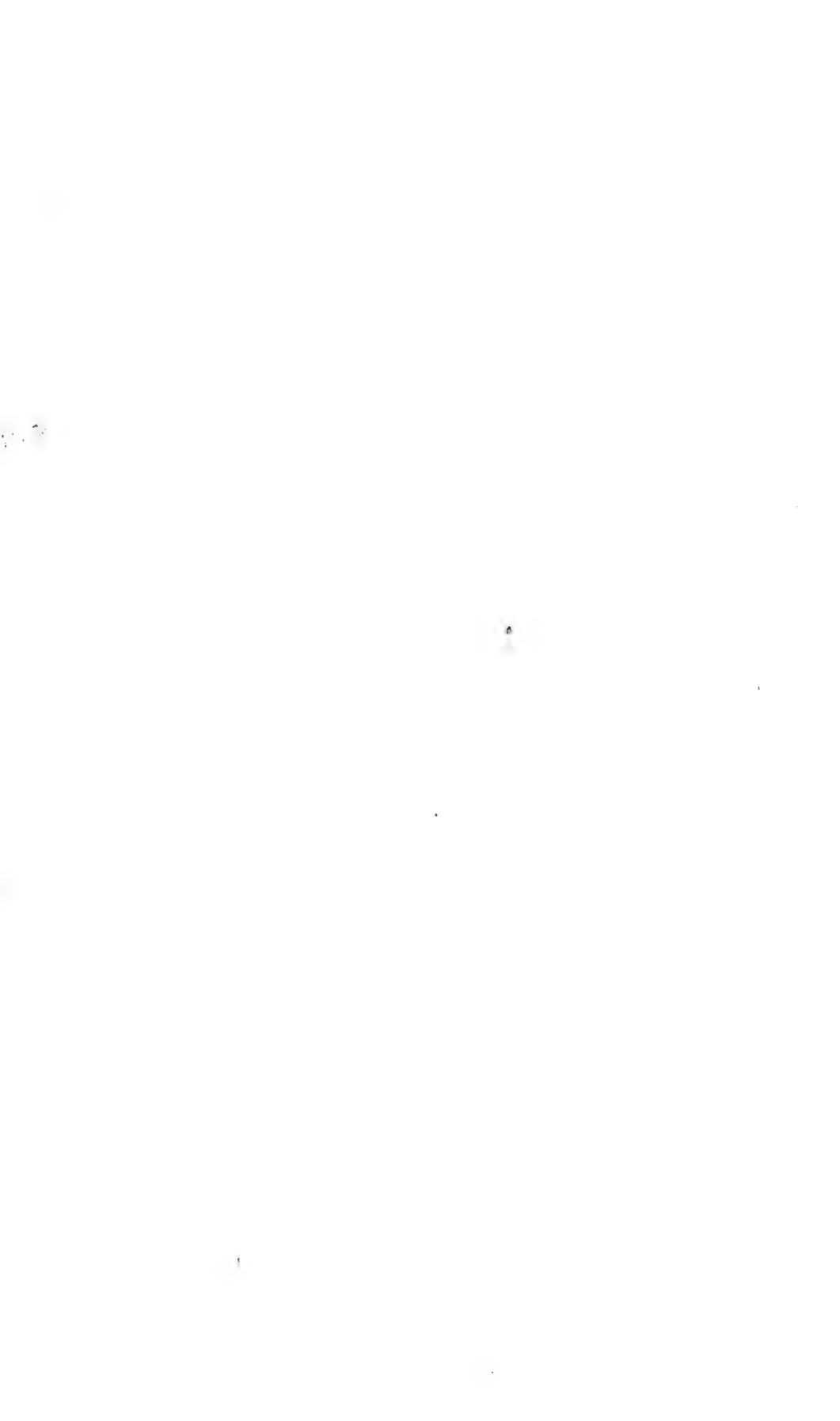
Lin. Syst. Nat. p. 1063.

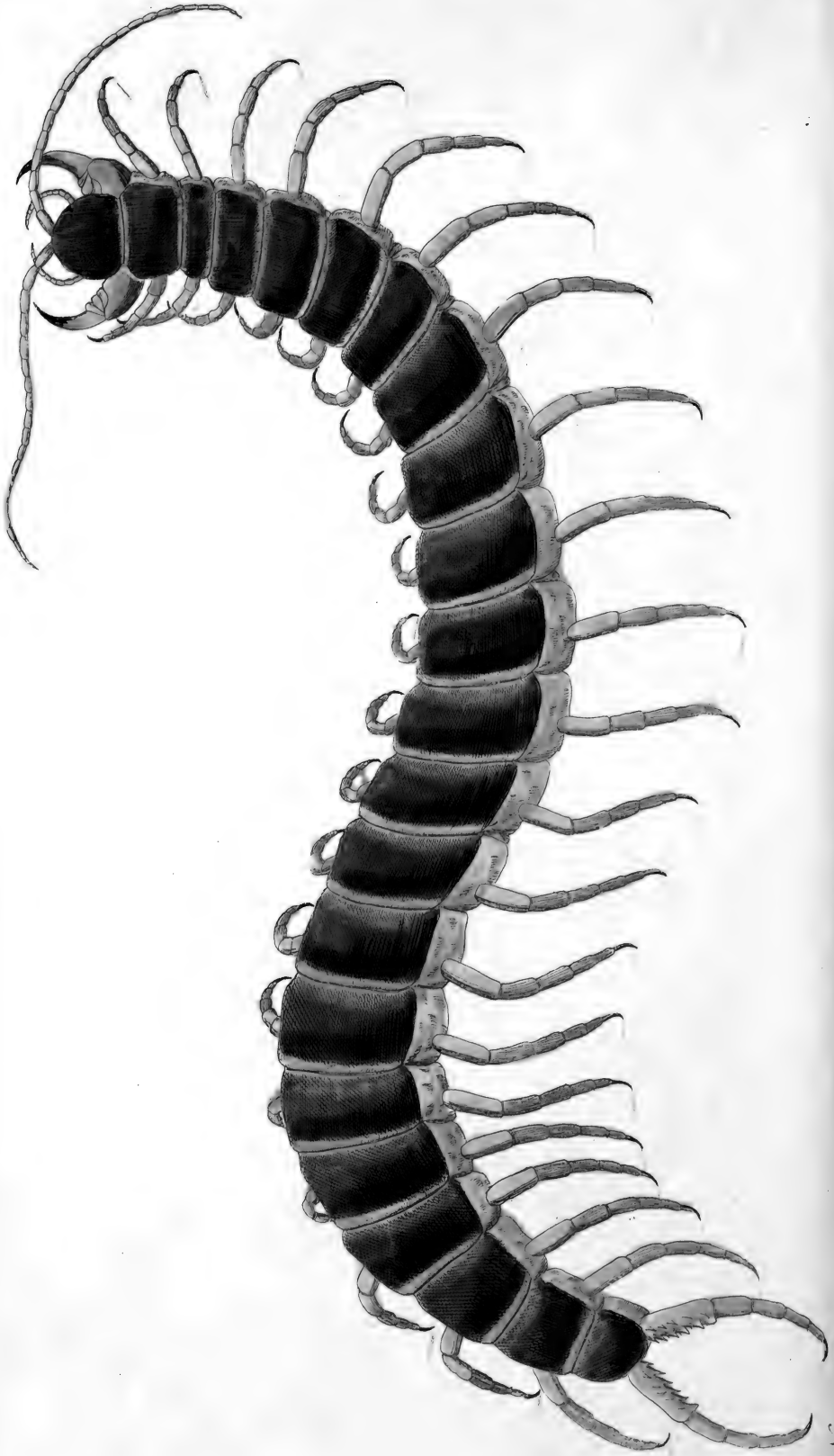
Huic Insecto, Indiam utramque et Africam incolenti, formidolosus omnino et horridus est aspectus. Non satis manifeste patet (ut mihi visum est) discrimen inter duas species Linnæanas, Giganteam scilicet et Morsitantem. Articulos itidem, seu corporis pedumque segmenta, non semper in eadem specie numero æqualia esse opinatus sum. In specie Europæa, ita se rem habere, probe cognoscitur: larvæ enim, seu juniores, pedibus paucioribus quam seniores sunt instructi. Veneno quodam imbuta est species illa jam descripta, quod per forcipem tubulatam, cui apex foratus, morfu in vulnus indit.

Scolopendræ

Scolopendræ hæ ingentes in fylvis plurimæ sunt, variis anguibus cibum præbentes. In domus haud raro irrepunt, Indiam colentibus adeo molestæ, ut lectorum postes in aqua immergere dicantur incolæ, ne noctu incommodi aliquid ab insectis hisce horrendis percipiant.

Veteres qui de Historia Naturali scripserunt, multa et dira perhibent de Scolopendrarum morfu, quorum tamen ita incertum est testimonium, ut facete potius fabulari, quam in veritatis investigatione versari videantur.





T H E
G R E A T S C O L O P E N D R A ,
O R
C E N T I P E D E .



GENERIC CHARACTER.

Feet numerous. As many on each side as the joints of the body.

Antennæ setaceous and jointed.

Feelers 2, jointed.

Body depressed, or flattened.

Linnæus.

SPECIFIC CHARACTER.

SCOLOPENDRA with about 20 legs on each side.

There is something uncommonly formidable in the appearance of this Insect. It is found both in the East and West-Indies, as well as in different parts of Africa. The difference between the two Linnæan species, the Gigantea and Morfitans, does not appear sufficiently clear, and I am inclined to believe that the number of joints and consequently of legs, is not always the same in different specimens of the same animal; indeed, in

the smaller European species this is well known to be the case; the larvæ, or those which are young, being furnished with fewer feet than when in a more advanced state of life. The species here described, is of a poisonous nature, and is furnished with a pair of forceps, which being tubular, and with an opening or slit towards the points, are the instruments through which the insect injects its poisonous juice when it bites.

These large Scolopendræ chiefly inhabit the woods, where they are preyed upon by different species of snakes; but, like the European ones, they sometimes are found in houses, and are said to be so common in some particular districts, that the inhabitants are obliged to have the feet of their beds placed in vessels of water, to prevent their being annoyed during the night by these horrible reptiles. The older writers on Natural History are full of the dreadful consequences resulting from the bites of Scolopendræ, but their descriptions are so vague, and their accounts so uncertain, that no great satisfaction can be obtained from reading their Histories.

MOTACILLA SUPERBA.



CHARACTER GENERICUS.

Rostrum subulatum, rectum : mandibulis subæqualibus.

Nares obovatæ.

Lingua lacero-emarginata.

Lin. Syst. Nat. p. 328.

CHARACTER SPECIFICUS.

MOTACILLA nigra, remigibus fuscis, abdomine albo, fronte genisque cæruleis.

Hæc avicula, inter alias sui generis forsan pulcherrima, Novæ Hollandiæ, præcipue Terræ de Van Dieman dictæ incola est ; illinc paucis abhinc annis primum in Angliam illata. Colores paulum variat ; circa frontem scilicet plus minus est cærulea, ventrem plus minus albida. Caput est aterrimum ; quod tegunt plumæ mollissimæ. Totum etiam corpus vestiunt plumæ præter solitum teneræ et elegantes.

T H E
S U P E R B W A R B L E R .



GENERIC CHARACTER,

Bill fubulated (or awl-shaped); ftrait; the mandibles nearly equal.

Nostrils nearly oval.

Tongue jagged, or lacerated towards the tip.

SPECIFIC CHARACTER.

BLACK WARBLER, with the long feathers of the wings brown; the belly white; the forehead and cheeks blue.

The beautiful species of *Motacilla* here figured, is a native of that part of New Holland called Van Dieman's Land; and is one of the new species of birds, which have been discovered during the voyages to those parts. It varies a little in colour, some specimens having more of the blue on the head than others; the belly also in some specimens is of a more dusky tinge than in others. The head is of the deepest velvet-black, and the feathers on the whole bird have an unusual share of softness and elegance.



S.N

London, Published, Nov^r 1st 1789 by J. P. Neaume. 1783. Cannon Street

MANIS PENTADACTYLA.



CHARACTER GÈNERICUS.

Dentes nulli.

Lingua teres, extensibilis.

Os angustatum in rostrum.

Corpus squamis tectum.

Lin. Syst. Nat. p. 52.

CHARACTER SPECIFICUS.

MANIS pedibus pentadactylis.

Lin. Syst. Nat. p. 52.

LACERTUS SQUAMOSUS.

Bont. Fav. p. 60.

Externam tantum formam spectanti, videatur hoc animal inter lacertos debere reponi: quibus tamen nulla alia re est affine. Est enim quadrupes revera viviparum, ab aliis quadrupedibus in hoc tantum discrepans, quod squamis validis admodum et magnis, propilis vestitur. Hæ squamæ mire adeo a Natura comparantur ut, appropinquante periculo, contrahere sese possit animal in pilam oblongam, nullis pene dixerim vulneribus obnoxiam; sunt enim squamæ robustæ adeo et acutæ, ut pedes ferarum rapacium, incaute contrectare audentium, severe lancinent. Animal mite est

Manis,

Manis, vesciturque præcipue insectis et vermibus. Inter sylvas et loca palustria vagatur, nullam aliam vocem præter rhonchum quendam peculiarem emittens. In magnam interdum crescit molem, pedes septem vel octo longa. Alia species est hujus generis, in pluribus huic valde similis, cui tamen cauda multo longior, pedesque unguibus quatuor tantum muniti sunt. Species hic depicta in India Orientali habitat, in insula Java quam alibi frequentior. In Africa etiam dicitur inveniri.



S. N.

London: Published, Novr 1st 1789 by F. & C. Nodder & Co. N^o. 48. Fenchurch Lane.

T H E
FIVE-TOED MANIS.



GENERIC CHARACTER.

No Teeth.

Tongue cylindric and extenfile.

Mouth narrowed into a snout.

Body covered with scales.

SPECIFIC CHARACTER.

MANIS with pentadactylous (or five-toed) feet.
Lin.

SHORT-TAILED MANIS.

Pennant. Hist. Quadr. p. 505.

If external form alone were regarded in this animal, it might be looked upon as a species of Lizard, so striking is the general resemblance which it bears to that tribe. In reality, however, it has no other affinity with those creatures; it is a genuine viviparous quadruped, and only differs from the generality of other quadrupeds in being covered, not with hairs, but with large and strong scales, which are so admirably contrived by Nature, as to enable it to contract itself on the approach of danger, into an oblong ball, in such
a manner

a manner as to be almost invulnerable ; for such is the strength and sharpness of its scales, that they have been known to cut the feet of such beasts of prey as have ventured to attack it in this its defended state. The Manis is an animal of a harmless disposition. It feeds principally on insects, worms, &c. wanders about woody and marshy places, and has no other voice than a sort of snorting. It grows to a very great size, and sometimes measures several feet in length. There is another species of Manis, which has the same general appearance, but which differs in having a much longer tail, and the feet furnished with four claws only, instead of five.

The species here figured, is an East-Indian animal, and seems to be more common in the island of Java, than in other parts. It has also been found in Africa,

ARANEA AVICULARIA.



CHARACTER GENERICUS.

Pedes octo.

Oculi octo.

Os unguibus, seu retinaculis duobus.

Palpi duo articulati; masculis genitalibus capitati.

Anus papillis textoriis.

Lin. Syst. Nat. p. 1030.

CHARACTER SPECIFICUS.

ARANEA thorace orbiculato convexo; centro transverse excavato.

Lin. Syst. Nat. p. 1034.

Mer. Sur. t. 18.

Fabric. Spec. Inf. p. 545.

Araneam vulgarem et domesticam non possunt non horrescere et averfari incuriosi naturæ observatores. Quam longe tamen distat hæc minuta et imbellis species ab Araneæ Aviculariæ horrenda et ingenti mole! quam non solum alia Insecta sed ipsæ etiam aves reformidant, forcipes habentem unguibus accipitris magnitudine pares, oculosque quibus exactis et more vitri optici paratis pro microscopio uti possunt Philosophi.

Enormis

Enormis hæc Aranea in variis Americæ regionibus sæpe confecta, frequentior est in America Meridionali. Inter arbores versatur, aviculis infidians, quas prius forcipibus vulneratas sanguinem exfugendo deinde enecat. Forcipes istæ virus inflant in vulnus, ut et aliis plerisque Araneis commune est. Foramen juxta apices forcipum, per quod exit venenum, et de quo, sitne foramen necne, multum diuque inter physicos dubitatum est, in hac specie ab ipso oculo, sine ope microscopii plane potest percipi.

Mirari sane jure possunt illi, qui in microscopicis investigationibus versantur, illique præcipue qui microscopio Liberkuniano usi sunt, ullum unquam existisse dubium de hoc foramine in Araneorum forcipibus: inesse enim illud Araneæ ipsi vulgari et domesticæ plane demonstrat prima vel secunda lens istius microscopii. Notandum tamen est commune microscopium ad distinctum rei tam minutæ conspectum non satis accommodari. Swammerdamii et Roëselii acumen effugit hoc foramen, et probe notum est Meadum celeberrimum in tractatu suo de venenis Leewenhoekium errasse credere, cum venenum Araneæ per foramen forcipum exprimi asserit: affirmat enim Meadus se variarum specierum forcipes, et speciatim prægrandis hujus speciei sedulo examinasse, nec tamen foramen potuisse detegere. Cum tamen multos post annos rem illi plane ostendit Bakerus, priorem opinionem summo cum candore revocavit vir doctissimus, alteramque substituit; certas tantum species venenosas esse, eas nempe quæ tubulatis forcipibus instructæ sunt; ut in serpentibus evenit; quorum certæ tantum species veneno

veneno imbutæ sunt ; illæ nempe quæ dentes tubulatos gerunt, *e. g.* Crotalus, Vipera, &c.

Ab oculis aliorum Insectorum differunt longe Araneorum oculi, et pro diversitate specierum diversum habent numerum et situm.

Species de qua jam agitur octo habet oculos, in formam pene oblongo-quadratam dispositos. Horum duo intermedii reliquis grandiores sunt, et plane rotundi ; cæteri in formam ovi effinguntur.

THE
BIRD-CATCHING SPIDER.



GENERIC CHARACTER.

Eight *Legs*.

Eight *Eyes*.

Mouth furnished with 2 hooks or holders.

Two jointed *Palpi* or *Feelers*, the tips of which
(in the males) distinguish the sex.

The *Abdomen* terminated by papillæ, or teats,
through which the Insect draws its thread.

SPECIFIC CHARACTER.

SPIDER with orbicular convex thorax with a
transverse central excavation.

Lin. Syst. Nat. p. 1034.

Mer. Surin. tab. 18.

The common Spiders of Europe are frequently beheld with horror and aversion by those who have not accustomed themselves to an attentive survey of the works of nature; but what are these when compared with the terrific magnitude of the gigantic species here exhibited! A species which is formidable not only to other insects, but even to birds themselves; whose fangs are equal in size to the talons of a hawk, and whose



London. Dickinson. Nov. 1879 by E. T. Cresson Esq. N. A. London. June.

whose eyes are capable of being set in the manner of glasses and used as microscopes. This enormous Spider is not uncommon in many parts of America, but it is principally found in South-America. It resides amongst trees, and frequently seizes on small birds, which it destroys by sucking their blood, after having first wounded them by its fangs, which instil a poisonous fluid into the wound, in the manner of other Spiders. The slit or orifice near the tip of the fangs of Spiders, through which the poisonous fluid is evacuated, and the existence of which has afforded so much matter of doubt amongst Naturalists, is in this species so visible that it may be distinctly perceived without a glass.

To those who are accustomed to microscopical investigations, and make use of the advantageous structure of the opaque microscope, it may seem surprising that any doubt could ever have been entertained of the existence of this foramen in the fangs of Spiders, since even in the common House-Spider it is perfectly visible by the assistance of the first or second magnifier of Liberkun's microscope; but it should be considered that microscopes of the usual structure are not calculated for shewing to advantage so small an object, and which requires so favourable a light. Even Swammerdam and Roëfel could not discover it; and it is notorious that Mead in his Account of Poisons, imagines Leewenhoek to have been mistaken in supposing that the Spider evacuated its venom through a hole in its fangs; and declares that he himself had examined the fangs of several Spiders, and of this large one in particular,

particular, without having been able to discover the foramen. The late Mr. Baker however, several years after, convinced him of its existence. He then retracted his former sentiment, and with great candour and judgment gave it as his opinion, that, as amongst serpents, only some particular species are poisonous, and have teeth that are perforated for the emission of their poison, viz. the Rattle-Snake, the Viper, and others, so amongst Spiders some kinds only may be poisonous, viz. such as are provided with perforated fangs.

The Eyes of Spiders differ very much from those of most other insects; and are different both in number and disposition in the several species. The present species has eight eyes, which are disposed somewhat in the form of an oblong square. Of these the two middle ones are larger than the rest, and perfectly round; the others are of an oval shape.

ALCEDO CRISTATA.



CHARACTER GENERICUS.

Rostrum trigonum, crassum, rectum, longum.

Lingua carnosæ, brevissima, plana, acuta.

Pedes gressorii, plerisque.

Lin. Syst. Nat. p. 178.

Class: *Pica*.

CHARACTER SPECIFICUS, &c.

ALCEDO brachyura subcristata cærulea, subtus
rufa, cristâ nigro-undulata.

Lin. Syst. Nat. p. 178.

Edwards. t. 336?

Le VINTSI.

Buffon. Ois. vol. VII. p. 205.

In genere Alcedinis exempla sunt coloris varii et splendidissimi: inter omnes autem Alcedines eminet pulcherrima species in tabula depicta. Inter minores est sui generis. Cristam in vertice formosam gerit hæc avicula quæ illi non parvo est ornamento. In insula Amboyna apud Indos præcipue invenitur.

THE
CRESTED KINGFISHER.



GENERIC CHARACTER,

Bill trigonal, thick, strait, long, sharp-pointed.

Tongue fleshy, very short, flat, sharp-pointed.

Feet (in most of the species) gressorial, *i. e.* three toes forward, and one backward; and the three lower joints of the middle toe closely joined to those of the outmost.

Linnæus and Pennant.

Class, *Picæ.*

SPECIFIC CHARACTER. &c.

SHORT-TAILED BLUE-CRESTED KINGFISHER, rufous beneath, the crest undulated with black. *Lin.*

Edwards, pl. 336?

Le VINTSI.

Buff. Hist. Ois. vol. VII. p. 205.

In the Kingfisher genus, we have examples of the most striking variety and brilliancy of colour, and perhaps, in this respect, no species can be found that exceeds the bird here represented. It is one of the smaller birds of its genus. Its beauty is singularly heightened by the elegant crest with which the head is ornamented. It is a native of the island of Amboyna in the East-Indies.



London, Published Dec. 8th 1789 by R. P. Scauder & Co.

J. B. Rindon, Sculp.

GORGONIA FLABELLUM?



CHARACTER GENERICUS.

Flores Hydræ, sparsi e poris lateralibus.

Stirps radicata, cornea, continuata, ramosa; basi explanata, cortice obducta.

Lin. Syst. Nat. p. 1289.

Class: *Vermes.*

CHARACTER SPECIFICUS, &c.

GORGONIA reticulata ramis interne compressis, cortice flavo?

Lin. Syst. Nat. p. 1293.

FRUTEX MARINUS ELEGANTISSIMUS?

Clus. exot. 120.

FLABELLUM VENERIS.

Ellif. corall. p. 61. t. 26.

De corallii in hac tabula depicti natura et ortu, nomine Flabelli marini cogniti, plurimum disceptaverunt Philosophi; incerti quo in ordine entium debeat reponi. Multas hujus classis species scriptores antiqui et recentiores ut vegetabilia descripserunt; at a feriis et sedulis investigationibus doctorum hominum tandem compertum est vera esse animalia, vegetabilia tantum
structura

structura sua referentia, ab animalium incolentium labore ita efficta. Vetat instituti mei brevitatis varia in hanc quæstionem Physicorum argumenta proferre. Qui plura desiderat Acta Philosophica Anglica et Gallica, præcipue vero scripta Elliffi consulat. Substantias omnes marinas, communiter nomine Coralliorum et Corallarum distinctas, cum paucis aliis diversæ indolis animalibus, digerit Linnæus in duas divisiones, Lithophyta scilicet et Zoophyta. In Zoophytis animalis natura multo magis præpollet : nam hæc substantiæ (ut et nomen vult) ex animalibus et vegetabilibus compositæ sunt : in Lithophytis materia calcaria et lapidea magis dominatur. Lithophyta corallium quod incolunt revera ædificasse creduntur, ut patet in madreporis et in aliis coralliis lapidosis. Zoophyta autem ut putat Linnæus, sunt veræ plantæ, floribus animatis præditæ, peculiari Naturæ consilio a ramusculis in formam polyporum se pandentibus. Dubitari merito potest sitne hæc Linnæi idea vere Philosophica. Verisimilior fortasse Elliffi opinio, qui vult partem vulgo vegetabilem reputatam, esse meram basin, ab animalibus incolentibus effictam.

Hæc animalia forma sua ad genus Hydræ, seu Polyphi accedunt. Genus Gorgonia, ad quod præfens species pertinet, est forte omnium Zoophytorum elegantissimum. Plurimas continet species, inter quas aliæ sunt simplices, seu vix ramosæ ; aliæ valde ramosæ, et aliæ etiam reticulatæ ; sub quibus hæc ipsa species militat.

Formosum hoc corallium, in littoribus maris Mediterranei, in littoribus etiam Indicis et Americanis reperitur,

reperitur, rupibus aliisque basin securam præbentibus adnatum.

In magnam sæpe crescit molem, duorum scilicet vel trium pedum : frequenter etiam more elegantissimo proliferum conspicitur. Color ejus generalis purpureus est ; interdum flavus ; nec raro utrisque hisce coloribus variatus. Pars ejus vegetabilis est coloris obscure cornei seu fusci ; pars calcaria seu carnea, quam incolunt animalia, est, ut antea dictum, vel flava vel purpurea, et undique tuberculis parvis creberrime obfita, intra quæ, si recens sit Zoophytum, vivunt Hydræ parvulæ.

Fig. 1. Pars ramuli leviter aucti, cum tuberculis, seu Hydrarum cellulis.

Fig. 2. Hydra ipsa, magnitudine aucta.

THE
FAN GORGONIA,
OR
VENUS'S FAN.



GENERIC CHARACTER.

The *Flowers* Polypes, dispersed from the lateral branches.

The *Stem* rooted, horny, continued, branchy; flattened at the base, covered with a bark.

Lin.

SPECIFIC CHARACTER, &c.

RETICULATED GORGONIA, with the ramifications internally compressed, and the bark yellow (or purple).

Lin.

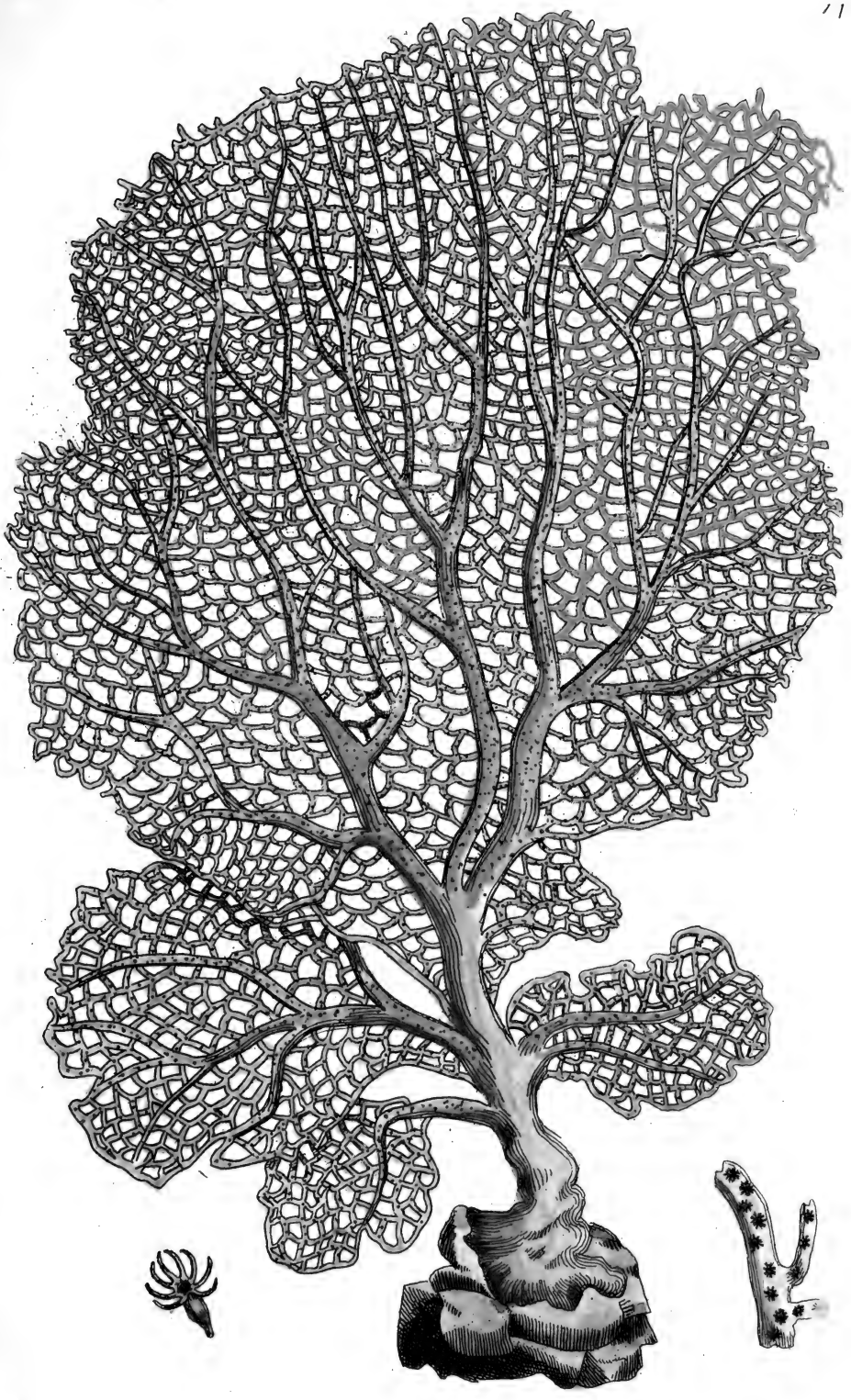
VENUS'S FAN.

Ellis's Zoophytes, p. 92.

SEA-FAN.

Ellis's Corallines, p. 60.

The object figured on this plate, and generally known by the name of the Sea-Fan, is one of those numerous productions which are not more remarkable for the singularity of their appearance, than for the different opinions



N



opinions which have arisen amongst philosophical enquirers, relative to their real nature, and the rank which they should hold in the scale of beings. Many of the species of this class have, by the ancient writers and several of the moderns likewise, been described as vegetables; but from the unwearied attention of some learned naturalists to this subject, it was at length discovered, and seems now pretty generally admitted, that they are in reality of an animal nature, and that the strong resemblance which many of them bear to vegetables, is to be considered as entirely owing to the operation of the animals which formed them.

In a publication of this nature, it will not be expected, that a particular investigation of the arguments on both sides of this curious subject should be introduced: we shall therefore refer such of our readers who may wish for more circumstantial descriptions, to the Philosophical Transactions, the Memoirs of the French Academy; and more particularly to the works of the late Mr. Ellis, where the fullest information may be found.

The whole tribe of the marine substances, known by the general names of Corals and Corallines, (with some animals of a different kind,) are arranged in the Linnæan System under two divisions, *viz.* Lithophyta and Zoophyta. In the latter of these, or Zoophytes, the animal nature predominates more apparently than in the former; and indeed these beings (as the name imports) seem rather to be a composition of animal and vegetable; whereas in the Lithophytes, or other Linnæan division, the stony or calcareous part predominates

nates greatly over the animal one. The Lithophytes are considered as the actual builders of the substance which they appear to inhabit, as in the Madrepores, and other hard or stony corals; but the Zoophytes are (according to the Linnæan idea) to be considered as a kind of real vegetables, furnished with animated flowers, which, by a peculiar process of nature, display themselves from the ramifications in the form of real animals of the Polype tribe.

Whether this idea be strictly philosophical may well be questioned; and perhaps the opinion of Mr. Ellis, *viz.* that the ramified or supposed vegetable part, is a meer basis or support formed by the animals which inhabit it, is the most probable opinion of the two.

These animals are generally of an appearance more or less resembling the Hydra, or Polype genus. The genus Gorgonia, to which our present subject belongs, is one of the most elegant of the Zoophyte tribe. It contains a great number of species, some of which are nearly of a simple or unbranched structure, while others are very much ramified, and some are also reticulated; it is in this latter division of the genus, that this species is to be arranged.

This beautiful coral is found on the coasts of the Mediterranean, and those of both the Indies; adhering to rocks or other substances, which may afford it a steady basis.

It is frequently of a very large size, *viz.* two or three feet in length; and it is often prolific in a most elegant manner. Its general colour is a beautiful purple, tinged with yellowish; but in point of colour^s

lour, it varies extremely ; some specimens being seen almost all purple, others all yellow, or variegated with purple branches and veins.

The vegetable part or stem is of a very dark horn-colour, or brown ; the animal part consists of the calcareous yellow or purple incrustation ; thickly beset with small protuberances, in each of which is a cavity, which, (in the recent coral) is the habitation of a small Polype.

Fig. 1. A small detached part, slightly magnified, shewing the cells in which the Polypes reside.

Fig. 2. The Polype itself slightly magnified.

PAPILIO PRIAMUS.



CHARACTER GENERICUS.

Antennæ apicem versus crassiores, sæpius clavato-capitatae.

Alæ (sedentis) erectæ sursumque conniventes,
(*Volatu* diurno.)

Lin. Syst. Nat. p. 744.

CHARACTER SPECIFICUS, &c.

PAPILIO alis denticulatis tomentosis supra viridibus; insitis atris; posticis maculis sex nigris.

Lin. Syst. Nat. p. 744.

PAPILIO AMBOINENSIS viridi et nigro-holofericus insignis.

Vincent. Mus. 10.

PAPILIO PRIAMUS.

Clerk. Leon. Inf. rar. t. 17.

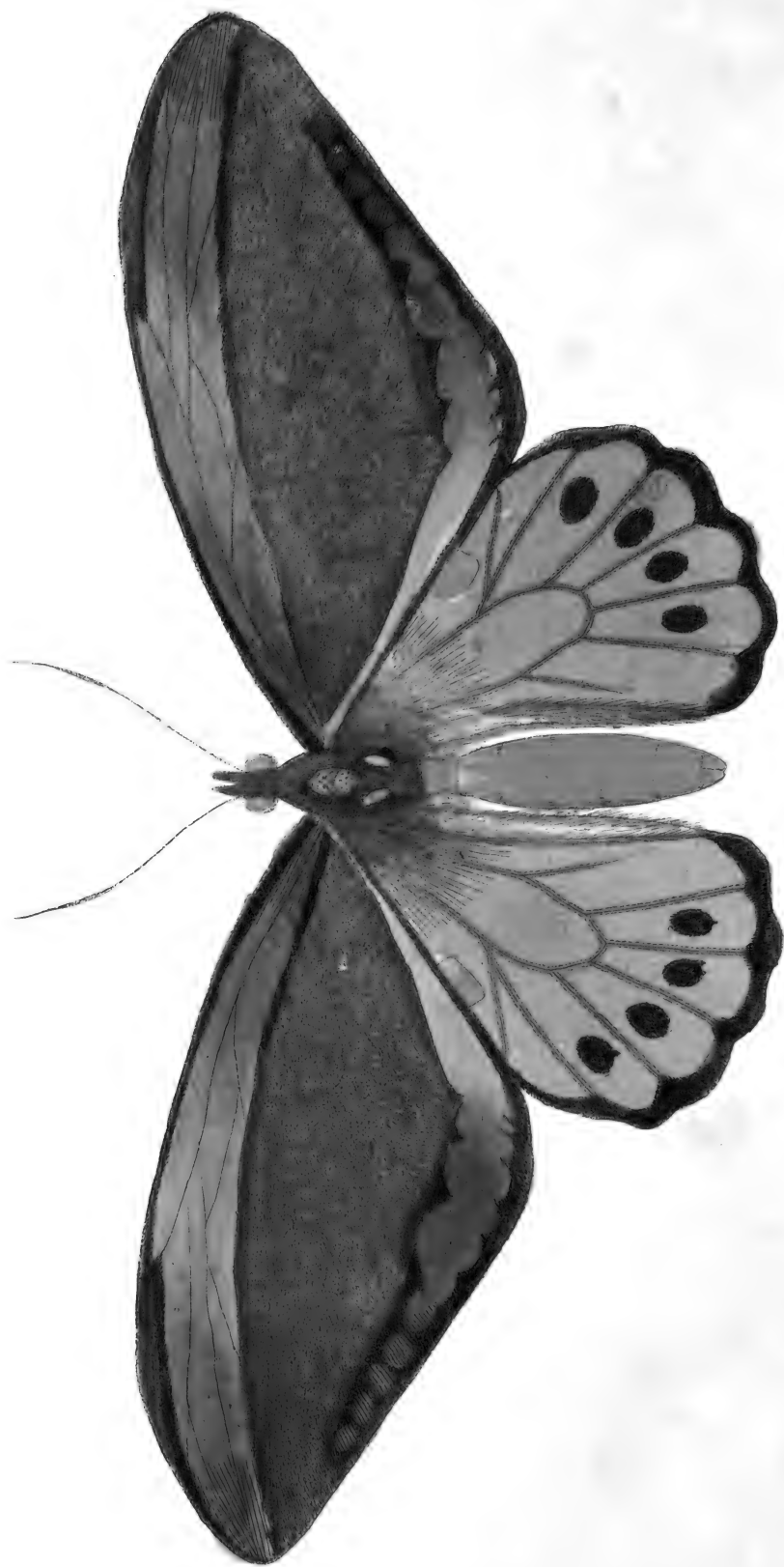
N. B. *Antennæ* in hac specie non clavato-capitatae, sed filiformes, et acuminatae.

Si illustrissimo Linnæo assentimur, hæc Papilionis species omnium pulcherrima reputanda est. “Papilionum omnium (inquit Linnæus) princeps longe augustissimus

“gustissimus, totus holofericus, ut dubitem pulchrius
“quidquam a natura in insectis productum”. In in-
sula Amboyna habitat, et inter lautissimas simul ac
pretiosissimas species censetur. Color ejus viridis ita
est formosus, ut omnem alium virorem superet, et fe-
ricum mollissimum et nitidissimum longe antecellat :
notandum etiam est quod aureus quidam fulgor cum
virore commistus, illi alarum parti quæ aterrimi est
coloris, pulcherrime opponitur.

Papilio Priamus primum locum obtinet inter duas
Linnæanas divisiones Papilionum majorum in Equites
Trojanos et Achivos. Hæ duæ sectiones Papilionum
ab omnibus aliis hujus generis insectis distinguuntur
forma peculiari alarum superiorum, quæ ab angulo
postico ad apicem longiores sunt quam ad basin.

Equites Troës plerumque maculis ex utraque parte
thoracis sanguineis notati sunt. Plerumque etiam co-
lores hujus divisiones in nigrum potissimum vergunt.



P R I A M U S,
OR THE
I M P E R I A L T R O J A N.



GENERIC CHARACTER.

The *Antennæ* or *Horns* thickening towards the upper part, and generally terminating in a knob, or club-shaped tip.

The *Wings* (when fitting) erect, and meeting upwards (*Flight* diurnal.)

Lin. Syst. Nat. p. 744.

SPECIFIC CHARACTER.

BUTTERFLY with black-and-green wings, with six (or four) black spots on the lower wings.

N. B. The *Antennæ* in this species are not thick at their extremities, but filiform and sharpened.

If we allow the opinion of Linnæus to be decisive, this is, of all the Papilionaceous tribe, the most beautiful insect. “It is (says Linnæus) by far the most august of all the Papilios; being all over of a silky appearance, and it may be doubted whether nature has produced any object more beautiful amongst insects.”

It is a native of the island of Amboyna, and it is regarded as one of the most curious and valuable species yet known. Nothing can exceed the richness of the green colour, which in particular lights, is not only of an appearance far superior to the finest fawn, but has also a golden tinge diffused through it, which forms the most beautiful contrast with the deep black of the rest of the wings.

The *Papilio Priamus* stands foremost amongst the Linnæan division of the larger butterflies into the two sections of Trojan and Grecian Warriors or Equites. These two sections of butterflies are distinguished from all others by the remarkable shape or outline of their upper wings, which are longer if measured from the hinder corner to their anterior extremity, than from the same point to their base. The Trojan Equites are generally distinguished by red or blood-coloured spots on each side their breasts: the prevailing colour also of this division is generally black.

PSITTACUS PORPHYRURUS.



CHARACTER GENERICUS.

Rostrum aduncum : mandibula superiore mobili,
cera instructa.

Nares in rostri basi.

Lingua carnosæ, obtusa, integra.

Pedes scansorii.

Lin. Syst. Nat. p. 139.

CHARACTER SPECIFICUS.

PSITTACUS brachyurus viridis, uropygio cy-
aneo, rectricibus (exceptis intermediis dua-
bus) purpureis.

Obs. Caudæ tectrices valde productæ ; rectrices apice subquadratæ,
nigro fimbriatæ.

Latham. vol. 1. p. 315.

Formosam hanc aviculam, Cayanam in America
Australi incolentem, colores decorant præter solitum
vividi et splendentes. Præcipue distinguitur hæc spe-
cies rectricibus, seu caudæ pennis purpureis ; exceptis
intermediis, quæ virent. Species sui generis fere ra-
rissima est, et (ut puto) nunc primum pictura in pub-
licum evulgata.

T H E
PURPLE-TAILED PARRAKEET.



GENERIC CHARACTER.

Bill hooked. Upper mandible moveable.
Nostrils round, placed in the base of the bill.
Tongue fleshy, broad, blunt at the end.
Legs short. Toes formed for climbing, *viz.*
two backward and two forward.

Linnæus and *Pennant*.

SPECIFIC CHARACTER, &c.

SHORT-TAILED GREEN PARRAKEET,
with the rump blue, and the tail (except
the two middle feathers) purple.

Obs. The coverts of the tail are very long, and the tail-feathers are
squamish at the tips, and fringed with black.

PURPLE-TAILED PARRAKEET.

Latham. vol. 1. p. 315.

The colours of this most beautiful species, which is a native of Cayenne in South America, are of uncommon brilliancy. It is principally distinguished by the purple rectrices, or tail-feathers; except the two middle ones, which are green. It is one of the rarest birds of its genus, and we believe this to be the first figure of it yet published.



London, Published by W. Woodcut, at the Sign of the Golden Lion, in the Strand.

W. Woodcut delin. & sculp.

RANA PIPA.



CHARACTER GENERICUS.

Corpus tetrapodum, nudum, ecaudatum.

Lin. Syst. Nat. p. 354.

CHARACTER SPECIFICUS, &c.

RANA digitis anticis muticis quadridentatis, posticis unguiculatis.

Lin. Syst. Nat. p. 354.

Seb. Mus. 1. t. 77.

Mer. Sur. t. 59.

Vallisn. Nat. 1. t. 41. f. 6.

Solent communes ranæ foeminæ ova sua in fossis et aquis stagnantibus, punctis mille nigris similia, glutine copioso contenta, primo vere deponere. Puncta hæc, ranarum futurarum veri embryones, elapsis paucis diebus, mole augentur, colore sunt minus fusco, e glutine circumfuso emergunt, et in aquis libere natant. Gyrinorum nomine nunc probe cognoscuntur, et corpore sunt prægrandi, sine ullis pedum vestigiis, cauda autem maxima pinniformi: ex utraque etiam parte thoracis apparent branchiæ ramosæ, seu organa respirationis. Elapso longo tempore, illisque nihil nisi magnitudine mutatis, branchiæ ramosæ decidunt, pedes anteriores e cute emergunt, et paulo post pedes posteriores.

posteriores. Vivit adhuc animal in aqua in qua primum nascebatur, cauda etiam remanente. Post aliquot tamen septimanas hæc quoque sensim decrefcens, tandem evanescit : jamque rana perfecta in terram progreditur, abhinc pro arbitrio vel in humo vel in aquis degens.

Talis est ranarum omnium Europæarum transformationis series (exceptis aliquot differentiis in figura et dispositione ovorum in variis speciebus). At vero in America Australi hujus generis est species, quæ inter omnia ludentis Naturæ miracula primum sibi locum videtur vindicare. Pullos enim more prorsus infolito e cellulis, seu concavis tuberculis in dorso fitis excludit. Differt igitur hæc ranæ species, utpote vivipara, ab omnibus sui generis, nec non ab aliis animalibus, infolito gestandi et parturiendi modo.

Surinamiam incolit rana hæc monstrosa. Color illi (saltem in speciminibus quæ ad nos pervenerunt) est plerumque plus minus fuscus, et interdum pene nigricans ; interdum multo pallidior. Animal est immodice deforme ; caput antica parte acuminatum gerens, rostro velut fuillo. Pedum anticorum digiti extremitates habent quadrifidas.

Affirmat CAMPER, vir anatomes peritissimus, Pipam uterum, seu ovarium internum habere, ovaque sua, eodem modo quo et alia hujus generis animalia, excludere ; et, si qua fides FERMINO, (qui se testem oculatum tam miræ rei fuisse asserit,) mas ova a fœmina deposita pedibus congregat, dorsoque fœminæ imponit, quæ fecundata, intra cellulas dorsuales illa recipit, et occludit, donec paulatim perfectam ranæ formam adeptam, iterum excludantur.

Animal

Animal hoc tam fingulare unicum tantum partum edere voluit Natura, nec cum aliis fui generis speciebus collatum, foecundum haberi potest; Pipa enim quam observavit FERMINUS, quinque diebus septuaginta quinque pullos produxit.

THE
P I P A,
O R
T O A D O F S U R I N A M.



GENERIC CHARACTER.

Body four-footed, naked, without tail.

Lin. Syst. Nat.

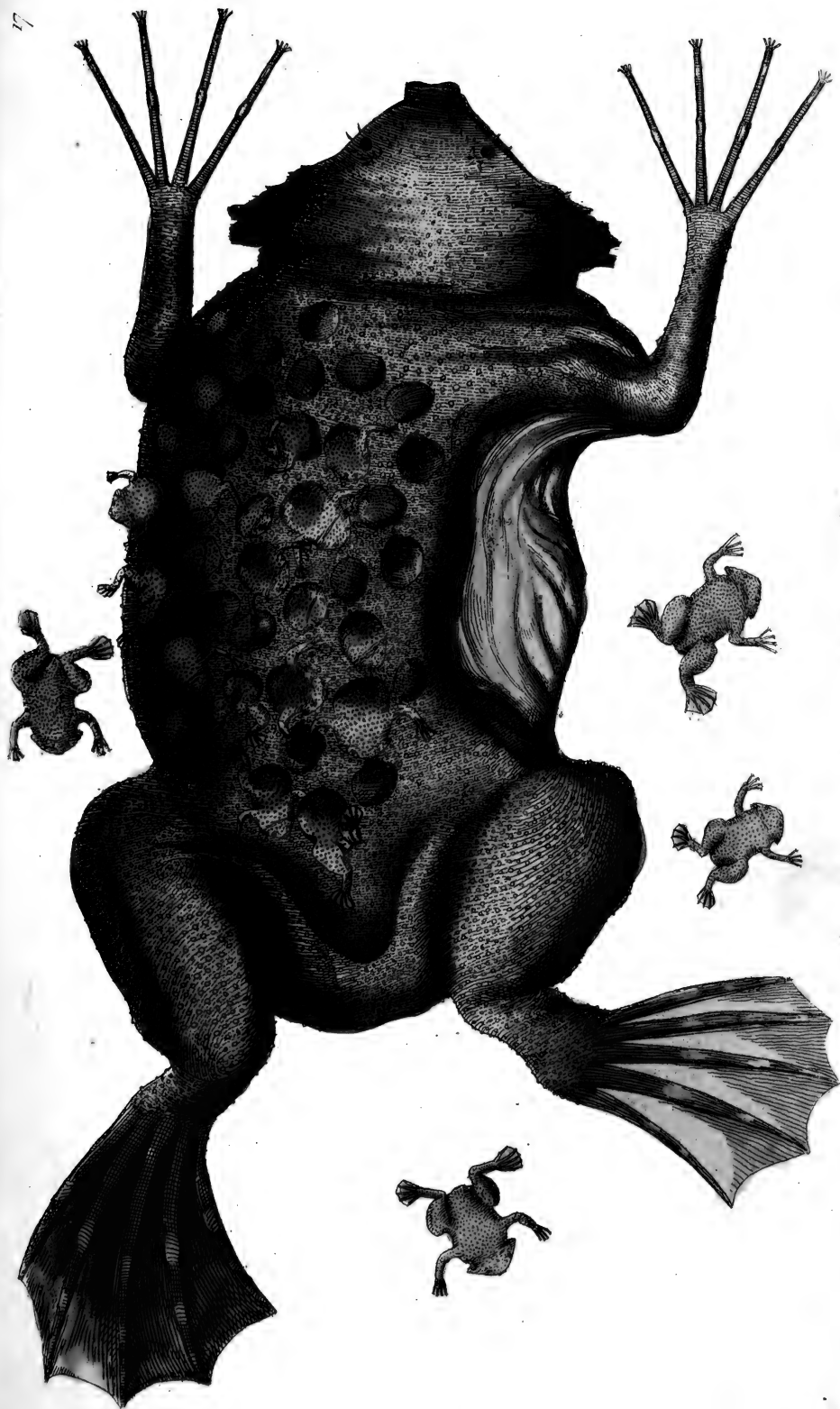
SPECIFIC CHARACTER, &c.

FROG with the toes of the fore-feet quadrifid at their extremities; the hind-feet webbed and clawed.

Seba. vol. 1. t. 77.

Mer. Sur. t. 59.

The spawn of the common frog is deposited in large heaps or clusters by the females in stagnant shallow waters and ditches in the early part of the spring; it consists of a congeries of black globular points, surrounded with a considerable depth of gelatinous substance. The black points are no other than the real embryos of the future frogs; in a few days they enlarge, change to a somewhat lighter colour, and break through the surrounding gluten, and swim in the water.



Reproduction d'un crapaud par J. B. S. de la collection de M. de Buffon

ter. In this state they are well known by the name of tadpoles, and consist of a very large body, with no appearance of legs, but furnished with a very remarkable fin-shaped tail, and on each side the breast is a set of ramified branchiæ, or respiratory organs. After having lived for a considerable space in this state, with little other change of appearance than an increase of size, the ramified parts drop away, and the fore-legs appear; these are soon succeeded by the hinder ones, and the animal still continues to inhabit the water in which it was hatched; it is still furnished with the tail, which at this period of its growth makes a conspicuous appearance; but, after some weeks this also shortens by degrees, and the animal, having attained its perfect figure, ventures upon land, and from that time is at pleasure an inhabitant of either element.

Such is the change (with some few variations as to the figure and disposition of the spawn in the different species) which the animals of this genus undergo in all the kinds which belong to Europe; but in South America we have an instance in a species of this same genus, of one of the most extraordinary particularities which the whole compass of Natural History can exhibit; for in this animal, (which is called the Pipa, or Surinam Toad,) as if by a caprice of nature, unparalleled by any other known animal, and diametrically opposite to the established laws of production in other creatures, the young are produced, perfectly formed, out of cells, or hollow tubercles placed on the back of the female. This species therefore forms an excep-
tion

tion to the rest of the Frog-genus in being viviparous, and is likewise an exception to the general way of production in all other larger animals.

This most extraordinary creature is a native of Surinam. Its colour, (at least in such specimens as are brought over to Europe) varies considerably in different subjects; but it is generally brown, more or less deep, and in some, even approaches to blackness. It is a species of most striking deformity; the head is of a sort of pointed shape, the snout somewhat like that of a hog; and the toes of the fore-feet are at their extremities divided into four small processes.

I should not omit to observe, that according to the celebrated anatomist Camper, the Pipa is furnished with an internal uterus, or ovarium, and excludes its ova in the manner of other animals of this genus; and, from the observations of Fermin, (who declares he was an eye witness of the strange process,) it appears, that the male, after the exclusion of the ova, collects the whole heap, with his paws, and deposits it on the back of the female, where, (after impregnation) they are received into the cellules, which close over them, and in which they gradually arrive at their complete form, and are then again excluded.

This singular animal is calculated by nature for bearing young but once; and, compared with others of its genus, it cannot be regarded as very prolific; the number which the female Pipa, observed by Fermin produced, was seventy-five, which were all excluded in the space of five days.

SPHINX OCELLATA.



CHARACTER GENERICUS.

Antennæ medio crassiores, seu utraque extremitate attenuatæ, subprismaticæ.

Alæ deflexæ (*Volatu* graviore vespertino seu matutino.)

Lin. Syst. Nat. p. 796.

CHARACTER SPECIFICUS, &c.

SPHINX alis repandis: posticis ocellatis.

Lin. Syst. Nat. p. 796.

SPHINX alis angulatis: posticis rufis, ocello cæruleo.

Fabr. Syst. Ent. p. 536.

Scopoli. Entomol. Carniol. p. 182.

Plurimas quæ infectis hujus classis accidunt, mutationes peculiari quadam lætitia solemus contemplari physici. Quamvis enim philosopho rem penitus intuiti fati constat animal idem esse, nec adeo immutari ut fiat alterum; sed partes tantum gradatim explicari quæ sub forma infecti longe aliter apparentis latuerunt; non possumus tamen non admirari, nostramque e mortuis resuscitationem Papilionis metamorphosi plane obumbratam agnoscere.

Antiqui

Antiqui fane varias Papilionum vices, illosque a morte temporaria redivivos intuentes, (ut verisimile est) quasi animæ symbolum habuerunt. Vox enim ψυχή et pro anima et papilione usurpatur. Recentiores Physici historiam naturalem ad religionis usum recte convertentes, ab hisce insectis mire adeo permutatatis humani corporis resurrectionem elucidare conantur. Exemplum tamen minus aptum seligunt, nempe Phalænam Mori, sive Sericam; utpote quæ nec sub terra immutatur, nec a morte accita, notabili est pulchritudine. At vero, inter omnia Naturæ phænomena, Sphinx, de qua jam agitur grandis et ultimæ humani corporis transformationis exemplum jure habeatur vividissimum. Eruca enim Sphingis, pabulo suo fatiata, sub terra alte se occultit, ibi exuvias ponit, et veluti mortua menses multos jacet: his exactis, iterum ab humo attollitur: tumuli claustra deserit, et inter animalia unum e formosissimis erumpit. Ipsius certe Apostoli idea, merito ab omnibus laudata, quaque ad popularem captum nulla potest esse accommodatior, philosopho minus apta et vivida videtur, quam ejusdem mysterii elucidatio, de variis hujus insecti vicibus desumpta. Nec fane in omnibus suis operibus aliud clarius exemplum profert Natura.

De hac metamorphosi ita cecinit poeta anonymus.

Segnis et informis serpens eruca per herbas

Innocue viridi sustinet ora cibo.

Jam conviva satur, pertæsa et lumina vitæ

Quærit in effossa ponere corpus humo.

Exiit et vestem, ac cæcis commissa latebris

Dormit, et in placida morte quieta manet.

Hyberni

Hyberni frustra fugiunt per pascua venti,
Altaque nix rigido jam tenet arva gelu.
Illa nihil fentit, tumuloque occlusa profundo
Dormit, et a vento tuta, et ab hoste jacet.
At simul auratis aperit cum cornibus annum
Taurus, et a zephyris terra soluta viret,
Cum frondent fylvæ, cum formosissimus annus,
En! tumulo surgit pulchra phalæna suo!
Surgit, et ut veteris rumpit jam claustra sepulchri
Miratur speciem corporis ipsa sui.
Quam formosa vigens! O quantum distat ab illa
Viderat errantem quam prior annus humi!
Alarum ornatum, gemmantes aspice ocellos!
Jam pluma in molli corpore multa nitet:
Mille trahens varios adverfo sole colores
Evolat, et cæcos despicit inde rogos.
Blandaque purpureis subvecta per aëra pennis
Per nemora et varios expatiatur agros.
Inque vices lectifque rosis violifque superbe
Incubat, et forma vincit utraque sua.
Scilicet et nostri reputentur vana sepulchri
Præmia, cum tali teste probata manent?

Sphinx Ocellata, quam in adjuncta tabula pro exemplo generis depingi curavimus, insectorum quæ in Britannia nascuntur, species est formosissima. Larva ejus super falices plerumque visa, sub initio mensis Augusti magnitudinem plenam adeptâ, sub terra sese sepelivit, et in chrysalidem mutatur, e qua, ineunte sequente Junio, phalæna ipsa erumpit.

THE
OCELLATED SPHINX,
OR
EYED HAWK-MOTH.



GENERIC CHARACTER,

Antennæ thickest towards the middle, or attenuated at each extremity.

Wings deflected, *i. e.* sloping downwards on each side, when closed. (*Flight* generally in the morning and evening.)

SPECIFIC CHARACTER.

SPHINX with repandous wings: the lower ones ocellated.

Lin. Syst. Nat.

The EYED HAWK-MOTH.

Albin. Inf. p. 8. f. 2.

The alteration of form during the different periods of life, which the insects of the Papilionaceous tribe undergo, affords a subject of the most pleasing contemplation to the mind of the Naturalist; and though a deeply philosophical survey demonstrates that there
is



is no real or absolute change produced in the identity of the creature itself, or that it is in reality only the gradual and progressive evolution of parts before concealed, and which lay masqued under the form of an insect of a widely different appearance, yet it is justly viewed with the highest admiration, and even generally acknowledged as in the most lively manner typical of the last eventful change.

If any regard is to be paid to a simularity of names, it should seem that the ancients were sufficiently struck with the transformations of the butterfly, and its revival from a seeming temporary death, as to have considered it as an emblem of the soul, the Greek word $\psi\upsilon\chi\eta$ signifying both the soul and a butterfly.

Modern Natural Historians, impressed with the same idea, and laudably solicitous to apply it as an illustration of the awful mystery revealed in the sacred writings, have drawn their allusions to it from the dormant condition of the papilionaceous insects during their state of chrysalis, and their resuscitation from it: but they have unfortunately chosen a species the least proper for the purpose, *viz.* the Silkworm; a species which neither undergoes its change under the surface of the earth, nor, when emerged from its tomb, is it an insect of any remarkable beauty; but the larva, or caterpillar of the Sphinx, when satiate of the food allotted to it during that state, retires to a very considerable depth beneath the surface of the ground, where it divests itself of all appearance of its former state, and continues buried for several months, then rises to the surface, and bursts from the confinement of its tomb,
and

and commences a being of powers so comparatively exalted, and of beauty so superior, as to be one of the most elegant of the whole insect tribe.

Even the animated illustration taken from the vegetable world, so justly admired, as best calculated for general apprehension, must yield in the force of its similitude to that drawn from the insect's life, since Nature exhibits few phænomena that can equal so wonderful a transformation.

This metamorphosis is thus described by an anonymous poet.

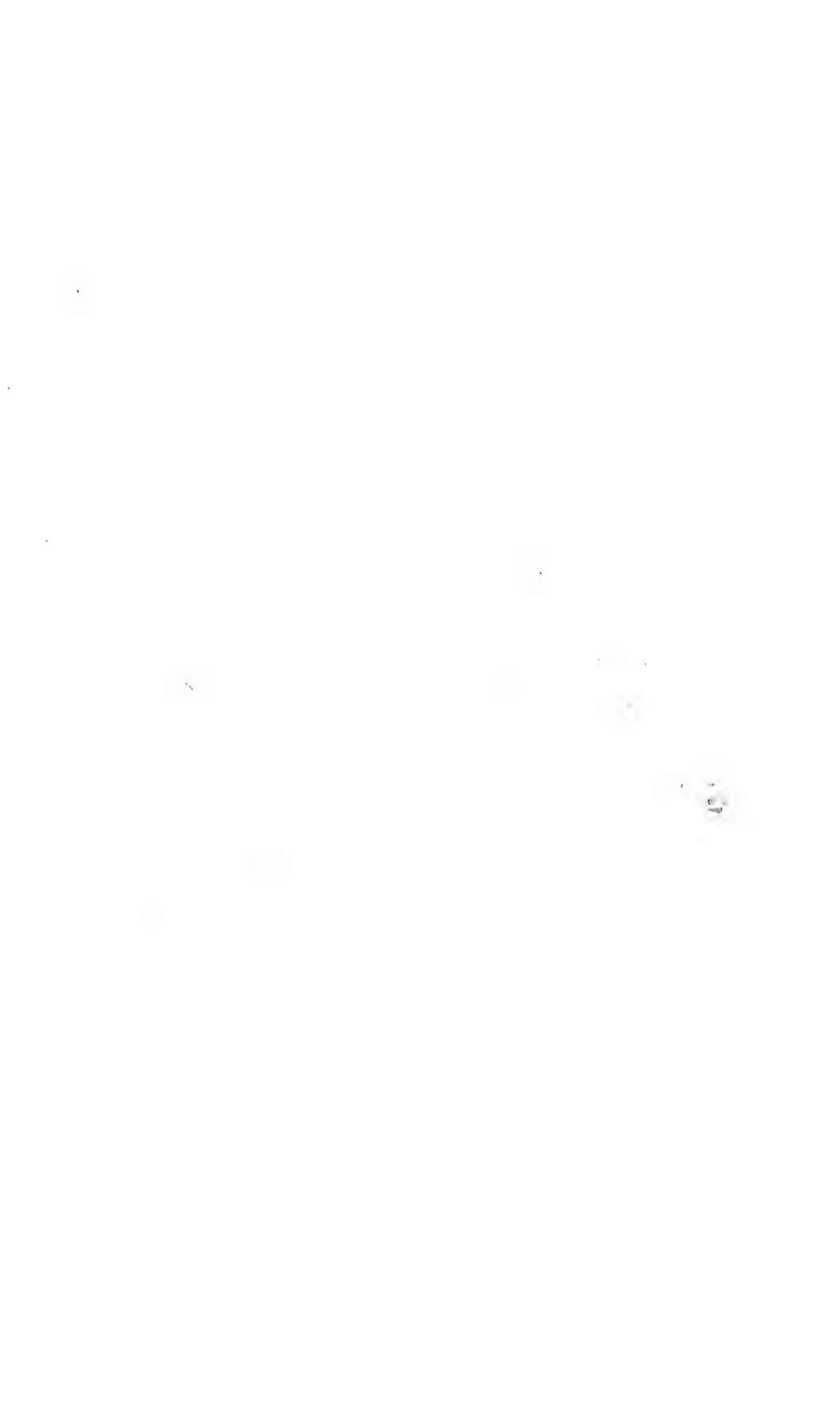
The helpless crawling caterpillar trace,
From the first period of his reptile race.
Cloth'd in dishonour, on the leafy spray
Unseen he wears his silent hours away.
'Till satiate grown of all that life supplies,
Self-taught, the voluntary martyr dies.
Deep under earth his darkling course he bends,
And to the tomb, a willing guest, descends.
There long secluded in his lonely cell,
Forgets the sun, and bids the world farewell.
O'er the wide waste the wintry tempests reign,
And driving snows usurp the frozen plain :
In vain the tempest beats, the whirlwind blows ;
No storms can violate his grave's repose.
But when revolving months have won their way,
When smile the woods, and when the zephyrs
play,
When laughs the vivid world in summer's bloom,
He bursts, and flies triumphant from the tomb.

And

And while his new-born beauties he displays,
With conscious joy his alter'd form surveys.
Mark, while he moves amid the sunny beam,
O'er his soft wings the varying lustre gleam.
Launch'd into air, on purple plumes he soars,
Gay Nature's face with wanton glance explores;
Proud of his various beauties wings his way,
And spoils the fairest flow'rs, himself more fair
than they.

And deems weak Man the future promise vain,
When Worms can die, and glorious rise again?

The Sphinx Ocellata, figured on the annexed plate, as an example of the genus, is perhaps the most beautiful insect which this country produces. The caterpillar is generally found on willows. It arrives at its full size towards the beginning of August, when it buries itself, and changes to a chrysalis, from which, about the first week in the following June, proceeds the moth.



CERTHIA FAMOSA.



CHARACTER GENERICUS.

Rostrum arcuatum, tenue, subtrigonum, acutum.

Lingua acuta.

Pedes ambulatorii.

Lin. Syst. Nat. p. 184.

Picæ.

CHARACTER SPECIFICUS.

CERTHIA rectricibus intermediis duabus longissimis, corpore viridi nitente, axillis luteis, loris nigris.

Lin. Syst. Nat. p. 187.

Certhiæ genus numerosum varias species continet coloribus ipsos Trochilos splendore æmulantes. Species jam depicta inter majores sui generis exstat. Color ejus communis est perviridis, cupreo quodam splendore læte super collum ac dorsum diffuso. Rostrum longissimum est. Axillæ, five partes humerorum inferiores sunt flavæ, partes autem exteriores, seu rectrices nigricant, plumis tamen margine viridi cinctis. Remiges, seu pennæ alarum longiores, nec non cauda, sunt atræ, margine etiam viridi cinctæ. Avis est Africana, et in Promontorio Bonæ Spei invenitur.

T H E
SHINING CREEPER.



GENERIC CHARACTER.

Bill slender, incurvated. and sharp-pointed.
Tongue differing in shape in the different species.
Legs moderately stout.
Toes placed 3 before, and 1 behind; back toe large: claws hooked and long.

Linnæus. Latham. Pennant.

SPECIFIC CHARACTER, &c.

CREEPER with the 2 middle tail-feathers very long, the body of a shining green, the under wing-coverts yellow, the lores, (*i. e.* the spaces between the bill and eye on each side) black.

Lin.

FAMOUS CREEPER.

Latham. vol. 1. p. 720.

The very numerous genus *Certhia* contains several species whose colours are equal in splendor to the Humming-Birds. The species here represented is one of the largest of the genus. Its general colour is a rich

rich



rich deep green, with a very strong tinge of copper-colour, which is most predominant on the neck and back. The bill is very long. The under parts of the shoulders, or axillæ, are yellow, the outward parts black, edged with green. The long feathers of the wings, and the tail, are also black with green margins.

It is an African bird, and is found at the Cape of Good Hope.

HYDRA VIRIDIS.



CHARACTER GENERICUS.

Flos. Os terminale, cinctum *Cirris* fetaceis.

Stirps vaga, gelatinosa, uniflora. basi se affigens.

Lin. Syst. Nat. p. 1320.

Class. Vermes. Ord. *Zoophyta*.

CHARACTER SPECIFICUS, &c.

HYDRA tentaculis subdenis brevioribus.

Lin. Syst. Nat. p. 1320.

HYDRA VIRIDISSIMA.

Pall. Zooph. 3.

Leeuwenboek. Act. Angl. vol. 23. p. 1494.

Ecce! redundabit fœcundo vulnere vermis,
Fertilis et damnis dives ab ipsa suis!

Inter miracula Naturæ juste referuntur variæ generis Hydræ species. Tam ultra fidem singulares sunt earum vita, et propagandi modus, præsertim facultas quam habent vel in frustula dissectæ repullulandi, ut in summo hærent dubio Philosophi; nec horum animalium historia plenam fidem adepta fit, donec experimentis a solertissimis Physicis iterum iterumque factis

factis et omnibus modis variatis, proprietates earum miræ, et primo visu impossibiles, tandem extra omnem dubitationem probatæ essent.

Cum in hoc opere visum sit, res breviter ut possumus, proponere, non longis ambagibus historiam hujus insecti percurramus.

Hydra est animal aquaticum, cujus variæ sunt species; quarum quæ maxime vulgaris est, in tabula depingitur, Hydra nempe viridis Linnæi. In aquis degit imperturbatis, plerumque in fossulis: in rivulis etiam per campos ductis frequens reperitur; præcipue mensibus Martii et Aprilis. Cauda se affigit caulibus plantarum aquaticarum, et paginis inferioribus foliorum. Corpore est longo, tubuloso: capite tentaculis octo seu decem longis, os cingentibus instructo. Corpus ita contrahere potest territa, ut globulum repræsentet; causa vero timoris dempta, rursus in pristinam longitudinem se explicat. Animal valde est vorax; vermiculos aliaque aquas incolentia animalia prædatur. Cum vermiculus, aut aquaticum aliud animal ad Hydram parum fauste accedit, dicto citius eum arripit, brachiis seu tentaculis constringit, ad os attrahit, et ut anguis ranam inhaurit. Ano caret Hydra: omne igitur quod vorat, absorbtis humoribus nutritiis, ab ore ejicit.

Vermiculum bis vel ter seipsam magnitudine superantem devorare facile potest; quod licet plane incredibile videri possit, notandum tamen est Hydram esse corpore valde tensili, et pro rei exigentia mirum in modum dilatato. Hydræ vegetatione sese propagant: junior enim vel duæ vel tres juniores e lateribus parentis erumpunt, ipsæ etiam haud raro fœcundæ antequam

tequam parentem deferunt : ut duas vel tres generationes simul uni animaliad hærentes videre sit. Maxime autem omnium mirabile adhuc indictum est ; nempe quod Hydra in partes dissecta, non destructa sed multiplicata est vulneribus suis ; fabulam de celeberrima antiquorum Hydra verissimam reddens,

“ Fertilis, et damnis dives ab ipsa suis.”

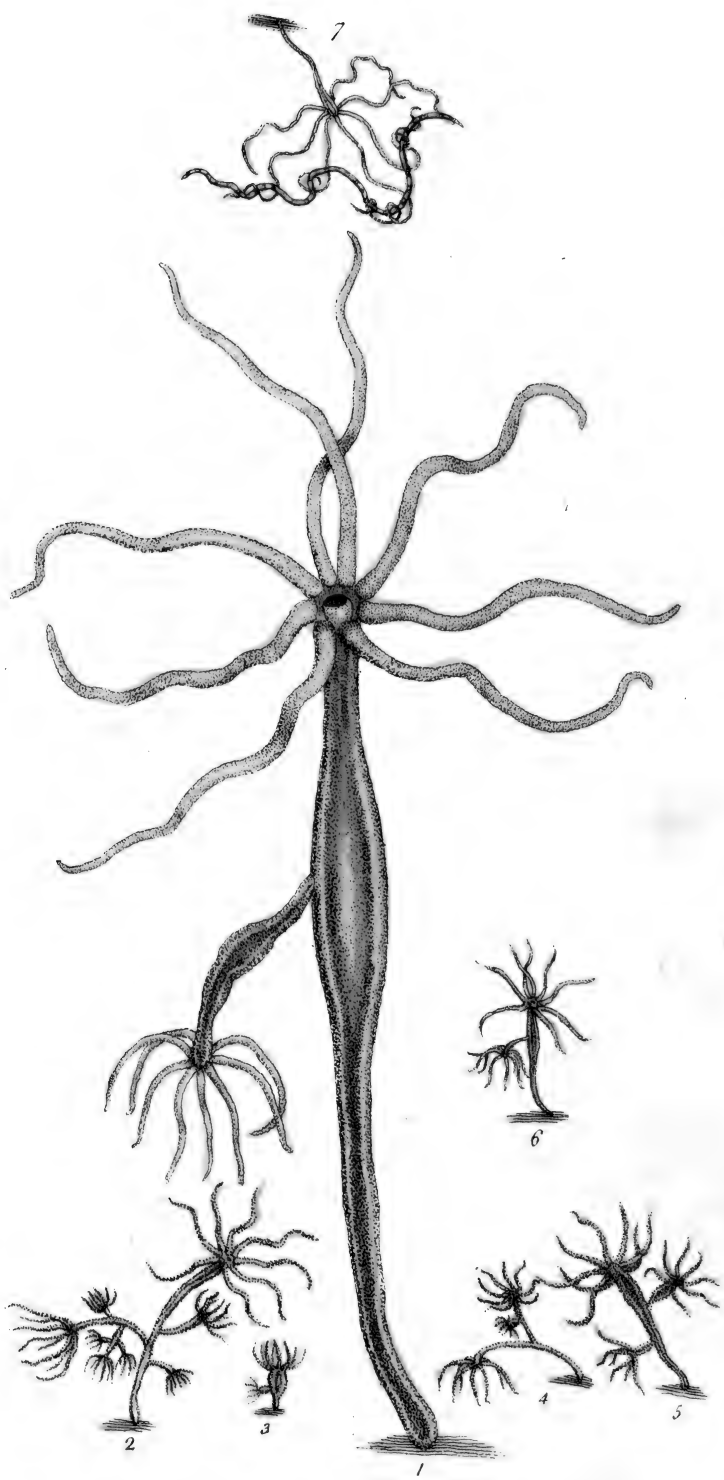
Hydra non præter solitum magna commode in tres partes dividi potest : nempe forficem insinuando intra vitrum in quo servatur Hydra, et arrepta occasione, ad extremum extensam dividendo ; partem etiam posteriorem cum se rursus extenderit, dissecando. Hoc factò, pars posterior novum caput cum tentaculis producet ; anterior pars novam caudam, et media pars novum caput cum tentaculis et nova cauda : elapsisque paucis diebus, omnes æque erunt integræ ac si mansissent invulneratæ. Ut verbo dicam, Hydræ omnibus modis dividi possunt sine injuria, et molestiam moramque frequentium experimentorum renatæ fatis remunerabunt. Hydram viridem, utpote speciem apud nos vulgatissimam, pro exemplo selegi : communis ejus longitudo est a quadrante uncia ad semiunciam, exclusis tentaculis ; interdum tamen multo major et longior conspicitur. Mirum hoc animal a Leewenhoeckio circiter finem centuriæ jam elapsæ detectum est, qui tamen ejus proprietates ignoravit. Oblitum videtur esse post Leewenhoeckium usque ad annum millesimum septingentesimum quadragesimum, cum iterum a Domino TREMBLEY repertum est ; qui innumeris experimentis, miras omnes qualitates, et præsertim repullulandi facultatem in lucem protulit. Experimenta

ta hæc cito vulgata sunt, et ab omnibus Europæ Phisicis repetita. Hoc modo plures Hydræ repertæ sunt, cum variis aliis animalibus eandem repullulandi potestatem habentibus; et nova velut Epochæ in Historia Naturali exorta est.

Fig. 1. Hydra magnitudine aucta.

Fig. 2, 3, &c. Hydræ magnitudine naturali; et aliæ leviter auctæ.

Fig. 7. Hydra vermiculum arripiens.



pl. 17

THE
GREEN POLYPE,
OR
HYDRA.



GENERIC CHARACTER.

Body long and tubular.

Mouth furrounded by arms, or tentacula.

SPECIFIC CHARACTER.

POLYPE with about 8 or 10 arms, or tentacula.

See with new life the wond'rous worm abound,
Rich from its loss, and fruitful from its wound!

The various species of Polype, or Hydra, are justly ranked amongst the most wonderful productions of Nature; so extraordinary are the particulars of their life and mode of propagation, as well as their powers of reproduction after being cut in pieces, that at their first discovery the philosophic world was involved in scepticism; and the History of the animals did not obtain complete credit, till experiments repeated by the most diligent and accurate Naturalists, and varied
in

in every possible manner, at length incontestibly proved the truth of their surprising, and seemingly impossible properties.

As it is the intention of this work to give as short descriptions as the nature of the subject can admit of, we shall, in our account of this animal, only relate in very plain and brief terms the general history of the creature.

The Polype is an aquatic animal, of which there are several species: of these one of the most common is that represented on the annexed plate; *viz.* the Green Polype, or Hydra Viridis of Linnæus. It is a native of clear waters, and may generally be found in great plenty in small ditches and trenches of fields; especially in the months of April and May. It affixes itself by the tail to the under part of the leaves, and to the stalks of such vegetables as happen to grow immersed in the same water. The animal consists of a long tubular body, the head of which is furnished with eight, and sometimes ten long arms, or tentacula, which surround the mouth or opening. It is capable of contracting its body in a very sudden manner when disturbed; so as to appear only like a roundish green spot; and when the danger is over, it again extends itself as before. It is of an extremely predacious nature, and feeds on the various species of small worms, and other water-animals which happen to approach: when any animal of this kind passes near the Polype, it suddenly catches it with its arms, and dragging it to its mouth, swallows it gradually in the same manner as a snake swallows a frog. The Polype has no
anus

anus or vent ; it therefore again evacuates the remains of the animal on which it has preyed, by its mouth. It is capable of swallowing a worm of twice or thrice its own size ; which at first appears incredible ; but is easily understood when we consider that the Polype's body is extremely extensile, and is dilated on such occasions to a surprizing degree.

The usual manner in which Polypes propagate is by vegetation ; one or two, or even more young ones emerging gradually from the sides of the parent animal ; and frequently these young ones are again prolific before they drop from the parent ; so that it is no uncommon thing to see two or three generations at once on the same animal. But the most astonishing particular is yet untold ; *viz.* that if a Polype is cut in pieces, it is not destroyed but multiplied by its wounds, and what was said of the fabulous Hydra of the ancients, is here literally true ;

“Fertilis et damnis dives ab ipsa suis.” *

A Polype of the common size may be very conveniently cut in three pieces, by taking the opportunity, when the creature is fully extended, of introducing a pair of scissars gently into the glass in which it is kept, and dividing it suddenly ; and when the tail-part is again extended, repeating the same operation : in this case the tail-part will produce a new head and arms, the head-part a new tail, and the middle part will reproduce both head, and arms, and tail ; and all these will in a few days become as perfect, except in length,

as

* Rich from its loss, and fruitful from its wound.

as the animal was at first. In short, Polypes may be cut in all directions and in every manner that can be conceived, without injuring them; and will amply repay the trouble attending the experiments by the astonishing views which they will exhibit during their different degrees of growth.

As the green Polype is one of the most common animals of the kind in this country, we have selected it as the best and most familiar example of the genus: Its most general length is from a quarter to half an inch, when extended, exclusive of the arms; but sometimes it grows to a much greater extent. The first discovery of this animal was towards the end of the last century by Leewenhoek; but he was not acquainted with its extraordinary properties of reproduction. It seems to have been neglected after Leewenhoek's observation, 'till the year 1740, when Mr. TREMBLEY of Geneva again discovered it; and by innumerable experiments was convinced of its reproductive nature. His experiments were soon made public; were repeated by all the Naturalists of Europe; several other species were discovered, as well as many other animals which possess the same power of reproduction, and a new Era commenced in the annals of Natural History.

Fig. 1. A Polype magnified.

Fig. 2, 3, &c. Polypes, some in their natural size, and others slightly magnified.

Fig. 7. A Polype seizing a worm.

LACERTA MONITOR.



CHARACTER GENERICUS.

Corpus tetrapodum, caudatum, nudum.

Lin. Syst. Nat. p. 359.

CHARACTER SPECIFICUS, &c.

LACERTA cauda carinata, corpore mutico
maculis ocellatis.

Lin. Syst. Nat. p. 360.

Seba. Mus. vol. 1. t. 97. *Fig.* 2.

————— vol. 1. t. 94. *Fig.* 1. 2.

————— vol. 2. t. 30. *Fig.* 2. ♂ tab. 49. *Fig.* 2.

————— vol. 2. t. 86. *Fig.* 2.

Nomen Monitor huic Lacertæ datum est, quoniam, (quod valde dubium videtur,) crocodilo viso, clamorem argutum præ metu tollere dicitur; hoc modo viatores de monstro isto appropinquante haud raro admonens.

In magnam molem sæpe crescit Monitor, et gracili est forma, caudam habens longissimam. Color ejus communis est niger, albo variatus. Variationes albæ in fascias transversas macularum circularium centro nigro dispositæ sunt, et inter has fascias aliæ plerumque occurrunt angustæ, seu velut striatæ. Variationes super caudam, non, ut in reliquo corpore, ad normam, sed

fed velut temere et fortuito pofitæ videntur. Crura pedesque albo tranſverſe maculata funt. In abdomine color albus dominatur, ſtriis maculisque nigris plus minus notatus. Interdum coloribus variat hæc ſpecies: color ejus nempe primarius eſt fufcus, aut ſubferrugineus, potius quam niger.

Elegans hæc Lacerta in Indiæ Orientalis ſimul ac Americæ partibus Auſtralioribus naſcitur.



1. 12

London, Illustrated Catalogue 1890 by J. P. Miller, fig. No. 1. From Science.

THE
MONITORY LIZARD.



GENERIC CHARACTER.

Body four-footed, tailed, naked.

Lin. Syst. Nat.

SPECIFIC CHARACTER, &c.

BLACK LIZARD, marked with transverse bands of ocellated white spots.

This species of Lizard has obtained the name of Monitor, from a circumstance which seems of very doubtful authority. It is pretended that on sight of the crocodile, it sets up a loud and shrill cry through fear, and thus frequently warns travellers of the vicinity of that formidable creature. It grows to a considerable size, and is of a very slender make, and the tail is extremely long. The general colour of the animal is black and white; the black forming the ground-colour, and the white the variegations, which are disposed in transverse bands of annulated spots with black centres, and between these bands are generally some narrowish stripes of white. On the tail the variegations are less regular than on the body. The legs and feet are spotted transversely with white. On the belly the white prevails, which is marked more or less with

with transverse streaks and spots of black. Sometimes this animal varies in colour; the ground being rather brown or ferruginous than black.

This elegant Lizard is found both in the East-Indies, and in the Southern parts of America.

STRIX PULCHELLA.



CHARACTER GENERICUS.

Rostrum aduncum (absque cera.)

Nares pennis setaceis recumbentibus obtectæ.

Caput grande: auribus oculisque magnis.

Lingua bifida.

Lin. Syst. Nat. p. 131.

Ord. *Accipitres*.

CHARACTER SPECIFICUS, &c.

STRIX capite auriculato, corpore cinereo, punctis maculis striisque nigris variato, remigibus albo maculatis.

STRIX PULCHELLA.

Pallas.

Latham. Synopf. vol. 1. p. 130.

Avicula, magnitudine naturali in tabula depicta, est omnium noctuarum hætenus cognitarum minima. Inter eas species sui generis militat quæ nomine noctuarum auritarum distinguuntur; quarum nempe tempora fasciculis plumosis exstantibus ornantur. Sibiriam habitat, et varias Moscoviæ regiones. Species est maxime elegans et concinna. Color ejus primarius est dilutissime cinereus, seu canus, punctis innu-

meris maculisque nigris et subferrugineis pulcherrime irroratus. Alarum remiges, seu pennæ fusco alboque fasciatæ. Cauda quoque albido leviter fasciata est; et tota avis coloribus suis avi *Torquillæ* non est abfimilis. Pectus et abdomen albicant, maculis longitudinalibus nigris notata.



L. N. *Published March 1870 by J. P. Vowler & Co. 100, Panton Street.*

THE
LEAST HORNED OWL.



GENERIC CHARACTER.

Bill hooked, not furnished with a cere.
Nostrils covered with recumbent bristly feathers.
Head large: *Ears* and *Eyes* very large.
Tongue bifid.

SPECIFIC CHARACTER, &c.

HORNED OWL with pale grey plumage, varied with specks and markings of black and brownish; the long feathers of the wings spotted with white.

SIBERIAN OWL.

Latham. Synops. vol. 1. p. 130.

The bird here represented in its natural size, is the least species of Owl yet known; it is of that division of the genus which contains the species commonly called Horned Owls, or such as have a tuft of feathers standing up on each side of the forehead. It is a native of Siberia, and is found in several parts of Russia. It is a species of uncommon elegance of plumage. The

general or ground colour is a very pale grey or ash-colour; curiously sprinkled all over with innumerable points and spots of black, brownish, &c. The long feathers of the wings are barred with brown and white; the tail is also slightly fasciated with white, and the whole plumage bears a very considerable resemblance to that of the Wryneck. The breast and belly are whitish, with longitudinal marks of black.

OPHRYS APIFERA.



CHARACTER GENERICUS.

Nectarium subtus subcarinatum.

Lin. Syst. Nat. tom. 2. p. 592.

Gynandria Diandria.

CHARACTER SPECIFICUS, &c.

OPHRYS bulbis subrotundis, scapo folioso, nectarii labio subquinelobo.

Lin. Spec. Plantar. p. 1343.

OPHRYS radicibus subrotundis, labello holosericeo, emarginato et appendiculato.

Haller. Hist. vol. 2. 1266. t. 24.

Planta hæc, cui nomen *Ophrys Apifera*, rei botanicæ studiosis probe cognita est: Junio et Julio floret. Super colles, et prope fylvas, solo præcipue cretaceo nascitur; venustatem tamen habet eximiam et peculiarem in umbroso fylvarum secessa reperta. Sic sita injuriam omnem quæ a sole nimium torrido foliis accidere solet, evitat. Flores formosæ hujus plantæ adeo sunt apibus similes, parvo intervallo conspecti, ut qui eam intuentur, in eadem sententia non possint non omnes convenire.

Notum epigramma, parce detortum, *Ophri Apiferæ* non male convenit.

*Dum dubitat vel apem Natura an fingeret herbam,
Conjuxit formas ingeniosa duas.*



Scutellaria Peruviana March 1840. E. D. Noddin. Sp. V. B. Boston. Herbar.

The large plates on serpents are called, in the Linnæan language, by the name of Scuta, to distinguish them from the Squamæ, or scales on the other parts of the body : but as those scuta which are situated under the tail, differ from the rest in being smaller or less extended, and form a separate assortment from the abdominal ones, they should always be called by a name which should instantly distinguish them from the Scuta or larger plates. I have therefore called these smaller scuta by the name of Scutula.

Notwithstanding an appearance of malignity in this animal, it is not of a venomous nature ; that is, it is not capable of inflicting any other than a simple wound by its teeth, as it is unprovided with the tubular fangs and reservoir of poison with which the venomous serpents are furnished.

Its colour is a most beautiful vivid Saxon or bluish-green, with several broad transverse bars of white down the back ; the belly is of a white colour, but slightly tinged with yellow. It is an inhabitant of America.

The figure of this Snake in Seba's Museum is so well executed both as to posture and accuracy, that it was thought better to copy it than to attempt a new one.

In the British Museum is a fine specimen of this animal. It is also figured in the Museum Adolphi Frederici of Linnæus, but the figure in that work is far from having the elegance of Seba's representation.

The description of this serpent by Linnæus in the Mus. Adolph. Frid. is as follows.

“ *Head* cordated, oblong before the eyes, depressed,
“ *gibbous* behind, imbricated with small scales ; the
“ anterior

“ anterior ones, especially at the sides before the eyes,
“ larger than the rest. Upper *Lip* retuse before, white,
“ emarginated, the sides excavated with a series of deep
“ scalary furrows, which give the face a formidable ap-
“ pearance. *Teeth* situated towards the anterior part
“ of the mouth, 2 or 3 in each jaw, both above and
“ below, long, sharp, fixed, not retractile. *Nostrils*
“ linear, transverse. *Eyes* orbicular.

“ *Trunk* compressed, especially towards the abdomen:
“ covered with smooth scales. *Abdomen* white; Scuta
“ 203. *Tail* 1-7th of the whole, attenuated, somewhat
“ obtuse, covered beneath with 77 Scutula.

“ Colour green, with transverse white bands, which
“ are narrow and situated on the back only, and some-
“ what broken or interrupted towards the middle.

“ Length 4 feet. Thickness nearly that of the small
“ of the arm. ”

STRIX NEBULOSA.



CHARACTER GENERICUS.

Rostrum aduncum. (absque cera.)

Nares pennis fetaceis recumbentibus obtectæ.

Caput grande: auribus oculisque magnis.

Lingua bifida.

Lin. Syst. Nat. p. 131.

Ord. *Accipitres*.

CHARACTER SPECIFICUS, &c.

STRIX fusco albidoque transversim fasciata, abdomine albo maculis oblongis ferrugineis.

Penn. Zool. Arct. p. 234.

Arct. Angl. vol. 62. p. 424.

Lath. Synops. p. 133.

Hæc avis inter majores sui generis existat, quamvis aliis speciebus magnitudine impar. Specimen a Doctore FORSTER in Actis Anglicis descriptum pondere erat librarum trium, longitudine sedecim unciarum, latitudine quatuor pedum. Tota avis fusco albidoque colore transversim fasciata est, fasciis versus caput minoribus et numerosioribus. In imo ventre et super latera sunt maculæ variæ longitudinales, magnæ, ferrugineo-fuscæ. Pallidæ quæ oculos cingunt plumæ,

striis concentricis fuscis leviter notantur. Super remiges alarum et caudam fasciæ alternatim albæ fuscæque majores sunt, et magis conspicuæ quam in aliis partibus. Colores totius avis sunt molles et eleganter dispositi. Sinum Hudsoni in America Septentrionali inhabitat hæc avis.



A 28

London, Published

April 1840 by T. C. Nodder & Co. 1. 28. Ranton Street.

THE
C L O U D E D O W L.



GENERIC CHARACTER.

Bill crooked (not furnished with a cere.)
Nostrils covered with recumbent bristly feathers.
Head large: *Ears* and *Eyes* large.
Tongue bifid.

Lin. Syst. Nat.—*Accipitres*.

SPECIFIC CHARACTER, &c.

OWL transversely fasciated with brown and whitish, the belly white with oblong ferruginous spots.

BARRED OWL.

Pennant. Arct. Zool. p. 234.

Lath. Synops. p. 133.

This is one of the larger species of Owls, though inferior in size to some others of the genus. A specimen described by Dr. FORSTER in the Philosophical Transactions weighed three pounds, and was in length sixteen inches, and in breadth, when extended, four feet. The whole bird is transversely barred with brown and whitish; the bars being smallest, and most numerous

rous towards the head. On the lower part of the belly, and on the sides, are some large longitudinal marks of ferruginous brown. The feathers furrounding the eyes are of a pale colour, lightly marked with concentric striæ of brownish. On the long feathers of the wings and tail, the alternate bars of brown and white are larger and more conspicuous than on the other parts. The colours on the whole bird are soft, and very elegantly disposed. It is a native of Hudson's Bay.

ACTINIA ANEMONE.



CHARACTER GENERICUS.

Corpus se affigens basi, oblongum, teres: apice dilatabili intus tentaculato.

Os terminale dentibus incurvis; rostro cylindrico radiato.

(*Apertura* præter os nulla.)

Lin. Syst. Nat. p. 1088.

ANIMAL se affigens basi, carnosum, oblongum, teres, contractile, viviparum.

Os terminale, dilatabile, tentaculis cinctum.

(*Apertura* præter os nulla.)

Ellif. Hist. Zooph. p. 1.

CHARACTER SPECIFICUS, &c.

ACTINIA subcylindrica, breviuscula, rubra, tentaculis interioribus ramosis, exterioribus conicis, obtusis.

AN ACTINIA EQUINA?

Lin. Syst. Nat.

Si Zoologiæ classes inferiores attentius scrutemur, multa inveniemus formæ adeo insolitæ et naturæ velut ambigæ, ut dubium videatur sintne inter plantas, an inter animantes memoranda. Plurima hujusmodi
a cele-

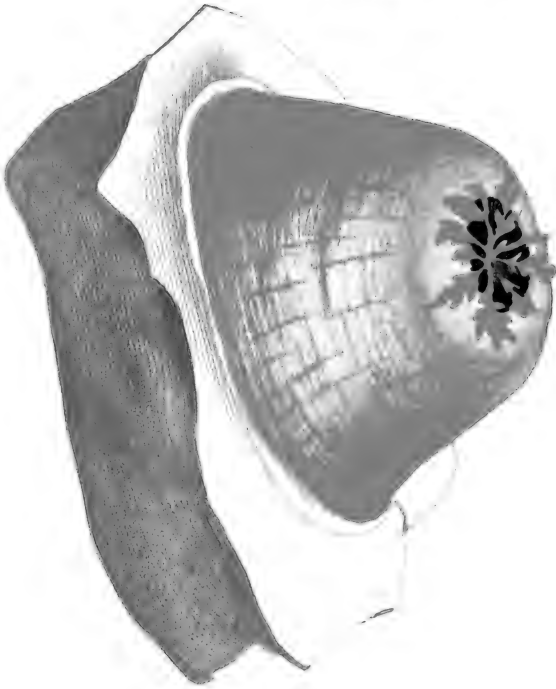
a celeberrimo Linnæo sub nomine *Molluscorum* digeruntur; ita scilicet ordinem constituentia classis Vermium. Inter varia Molluscorum genera nullum genus *Aëtiæ* aut pulchritudine aut miro artificio præcellit.

Multæ hujus generis species nomine Anemones marinæ descriptæ sunt, utpote formam floris Anemones, cum expanduntur, præ se ferentes.

Species autem hic depicta, peculiari modo hac appellatione digna videtur: illam igitur nomine *Aëtiæ Anemones* distinguere non dubitavi. Quamvis perquam vulgaris sit hæc species in variis Europæ littoribus, et nullis frequentior quam nostratibus, a Linnæo tamen in *Systemate Naturæ* minus videtur descripta. Rupibus arcte adhæret, et mari refluxente, interdum nuda super rupes, plerumque tamen paulum sub aqua relinquitur. Color illi generalis est ruberrimus, plus minus vividus in diversis speciminibus. Magnitudinem repræsentant tabulæ. Dum contrahitur (*Fig. 1.*) cono obtusissimo similis est, apice aperto, quem pro arbitrio penitus claudere potest: plerumque tamen adeo referatus est apex, ut ramosa aliquot tentacula centralia emergant. (*Fig. 2.*) Animal autem expansum spectaculum exhibet pulcherrimum omnino et mirandum. Duplicem enim, et interdum triplicem in circumferentia ordinem tentaculorum protrudit, forma oblonga, apicibus obtusis, quibus color flavus est, rubro eleganter variatus: hoc modo florem a quo nomen habet, optime exprimens. (*Fig. 3.*) Tentacula centralia nunc non exferuntur, sed ampla in medio relicta est cavitas, in quam si aliquid extraneum introducitur, aut si aliqua tentacula vel leviter tanguntur, illico se fortiter contrahit

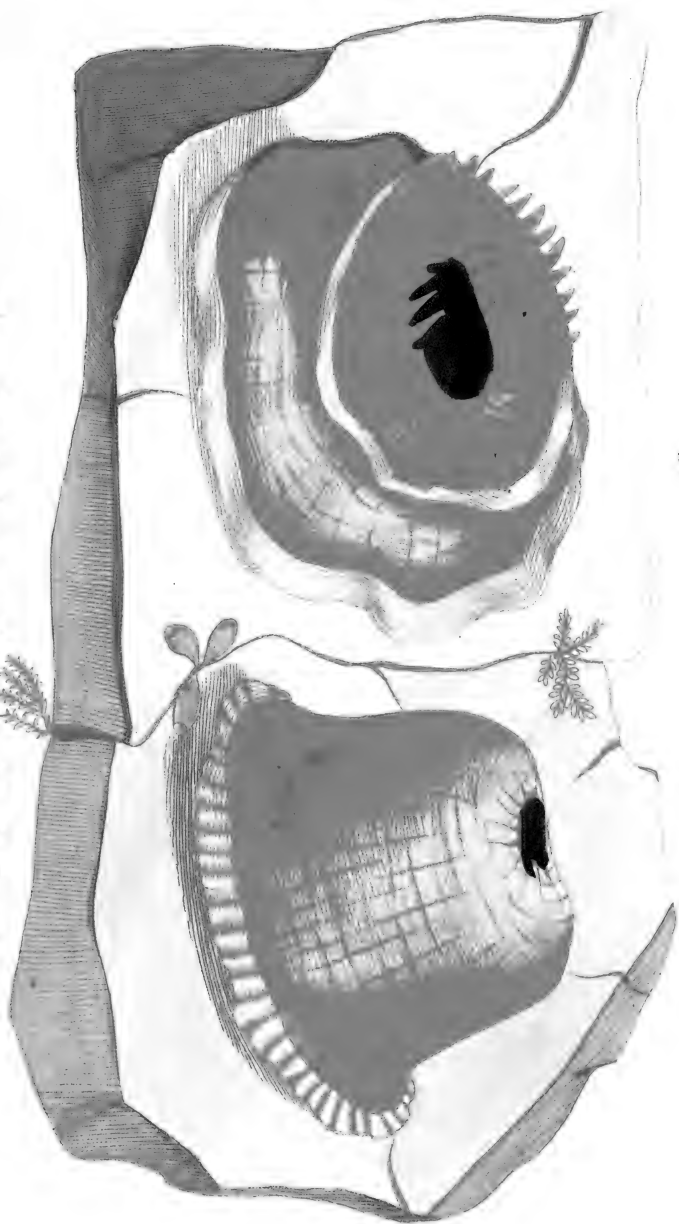
contrahit animal, et in formam conii, (ut in *Fig. 1.*) rursus subducitur. Hanc Actiniæ speciem interdum a rupe sua detraxi, vidiq̄ue illam mirabundus paulo post, cum languescere cepit, omnia pene viscera protrudentem in formam membranæ inflatæ et late expansæ, coloris flavescentis, radiis subrubris et viride palentibus variati. (*Fig. 4.*) Cum hoc fit, tentacula centralia non exserta sunt, series autem duplex vel triplex tentaculorum in circumferentia pulchre expanditur. Viviparæ sunt Actiniæ, sed ab experimentis in nonnullis speciebus hujus generis demonstratur posse animal (adhibita cautela) in partes abscindi, et hoc modo propagari, singulis partibus gradatim ad perfectionem repullulantibus.





London, Botanic Garden, from the garden of T. R. de la Roche Esq. No. 1000.

London. Published & sold every by W. D. London St. N. B. Antiquarian.



THE
ANEMONE ACTINIA.
OR
SEA ANEMONE.



GENERIC CHARACTER.

Body oblong, nearly cylindric, fixing itself by the base, the top expanfile and tentaculated within.

Mouth terminal, furnished with crooked *teeth*.

No other *Opening* except that of the mouth.

SPECIFIC CHARACTER.

ACTINIA, of a nearly cylindric shape, shortish, with the interior tentacula ramified, the exterior ones conic and obtuse, Colour red.

When we take a view of the lower orders of Zoology, we find a large and singular set of beings, which are so widely distinct from the other tribes of the animal world, that they seem almost as nearly allied to vegetables as to animals. Many of these curious productions of Nature are arranged by Linnæus under the title of Mollusca; which title is one of the subdivisions of the Linnæan tribe of Vermes. Of the various
genera

genera belonging to the Mollusca, that of *Actinia* is perhaps the most elegant and curious. Many species of this genus have been called by the name of Sea-Anemonies, from a general resemblance which they bear, during their expanded state, to that flower. The species here represented, seems in a peculiar manner worthy of this name. I have therefore given it the title of the Anemone *Actinia*.

Though extremely common on several of the European coasts, and on our own in particular, it does not seem distinctly mentioned by Linnæus in the *Systema Naturæ*. It adheres firmly to the rocks, so as to be frequently left above water at the ebbing of the sea; but it is generally found adhering at some little depth below the surface of the water. Its general colour is a deep red, more or less vivid in different specimens, and of the size represented in the annexed plates.

When in a state of contraction, (as at *Fig. 1.*) it has the appearance of a very obtuse cone, with an orifice at the top, which it can at pleasure close entirely; but which is generally so far open, as just to exhibit a few of the interior branchy tentacula or central parts. (*Fig. 2.*) but when expanded, it presents a most curious and beautiful appearance, (*Fig. 3.*) it then displays a triple row of circular tentacula of an oblong form, with obtuse points, of a yellow colour, and varied with red in such a manner as to bear a very considerable resemblance to the flower from which it is named. In this state the central tentacula are not protruded, but a large cavity appears in the middle, into which, if any extraneous substance is introduced, or even if any of the

the tentacula are but slightly touched, the animal instantly contracts itself into a conoid shape again, (as at *Fig. 1.*)

I have sometimes taken this species of *Actinia* from its native rock, and have observed that after some time, when it grew languid, it protruded in a most extraordinary manner almost the whole of its interior parts or viscera, in the form of an inflated membrane of a pale yellow colour, and striped very elegantly with rays of red and pale sea-green. (*Fig. 4.*) In this state it does not protrude any of the central or branchy tentacula, but the rows of lateral ones are protruded all round the circumference. The *Actiniæ* are viviparous animals, and experiments have been made on some of the species of this genus, which prove, that they are capable of being cut (with proper care) into several parts, each of which by degrees becomes complete.

PAPILIO POLYMNESTOR.



CHARACTER GENERICUS.

Antennæ apicem versus crassiores, sæpius clavato-capitatae.

Alæ (sedentis) erectæ sursumque conniventes.
(*Volatu* diurno.)

Lin. Syst. Nat. p. 744.

CHARACTER SPECIFICUS.

PAPILIO alis dentatis subconcoloribus nigris, posticis apice cærulefcentibus nigro maculatis.

Fabr. Spec. Insect. tom. 2. p. 9.
Eq. Troj.

Elegans hoc insectum, Asiam incolens, est inter species a Linnæo non descriptas. Alæ ejus superiores sunt aterrimæ, nubeculis tamen paucis albescentibus in longitudinem juxta apices ductis, et prope basin nota exstat subtrigona producta coccinea. Alarum inferiorum basis est aterrima et holoserica, pars autem reliqua colorem habet e subcæruleo albicantem, maculis nigris niveisque ornatum.

T H E
POLYMNESTOR BUTTERFLY.



GENERIC CHARACTER.

Antennæ, (or *Horns*) thickening towards the upper part, and generally terminating in a knob, or club-shaped tip.

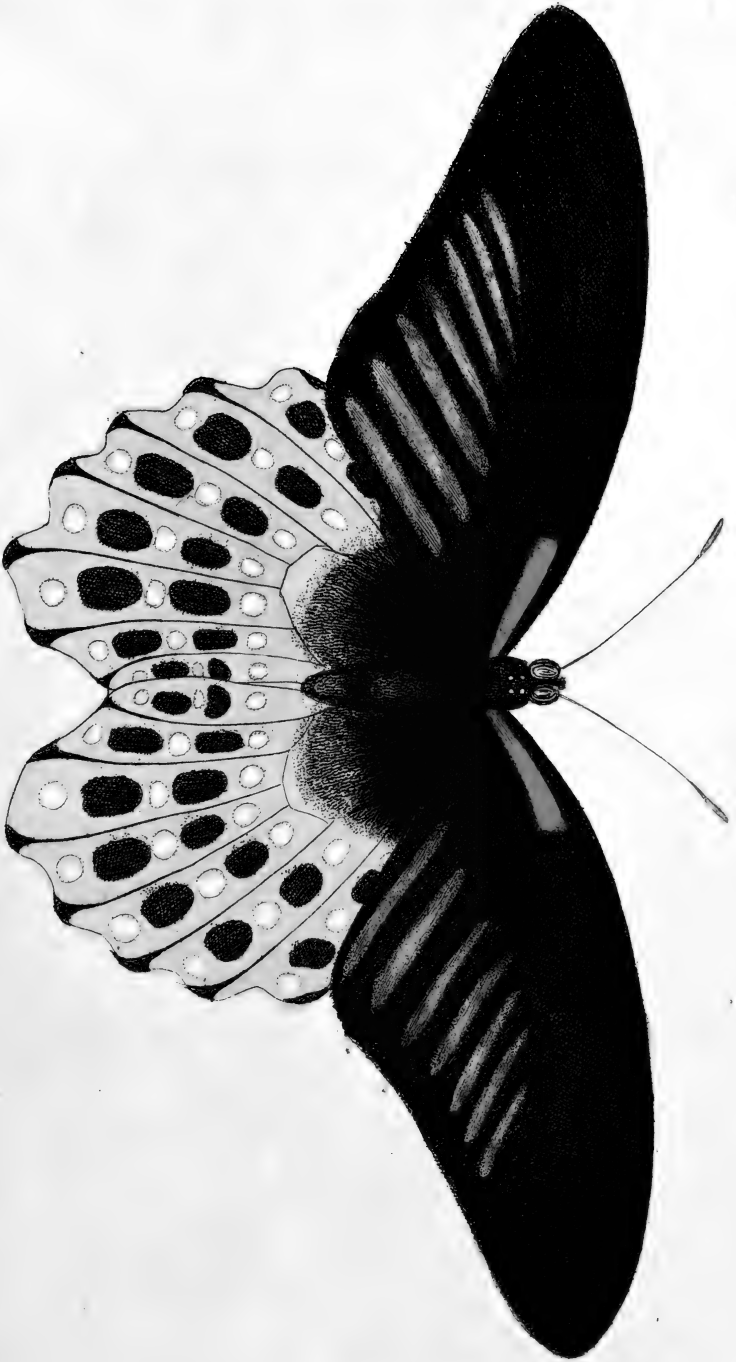
Wings (when fitting) erect, and meeting upwards.
(*Flight* diurnal.)

Lin. Syst. Nat. p. 744.

SPECIFIC CHARACTER.

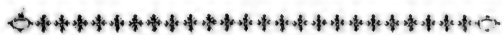
BUTTERFLY with indented black wings, colour of both surfaces nearly the same, the lower wings blueish towards the tips, and spotted with black.

This beautiful insect is one of those species which are not in the works of Linnæus. It is an inhabitant of Asia. The upper wings are of a deep black, with a few longitudinal whitish clouds towards the tips, and a lengthened mark of deep crimson of a somewhat triangular shape, near the base of each. The lower wings are of a deep velvet-black at the base, and from thence of a most elegant whitish or extremely pale blue, ornamented with spots of black and snow-white.



London: Published first by J. R. Walker & Co. 1837. Reissued by Rivers.

LEMUR TARDIGRADUS.



CHARACTER GENERICUS.

Dentes primores superiores 4: intermediis remotis.

Inferiores 6: longiores, porrecti, compressi, paralleli, approximati.

Laniarii solitarii, approximati.

Molares plures, sublobati; antiqui longiores, acutiores.

Lin. Syst. Nat. p. 44.

CHARACTER SPECIFICUS, &c.

LEMUR ecaudatus, subferrugineo-cinereus, linea dorsuali fusca.

LEMUR ECAUDATUS.

Lin. Syst. Nat. p. 44.

Singulare hoc animal interdum pro Bradypi specie errantes habuerunt auctores, et nomine Tardigradi Ceylonici descripserunt. Bradypo tamen nequaquam affine est, nisi quod, (ut ipsum nomen vult,) tarde admodum gradiatur; in quo sane ab omnibus aliis sui ipsius generis speciebus insignitur differt: sunt enim illæ ingenii maxime vividi, et motus omnino celerissimi. Notabile etiam est quod vel ullo caudæ vestigio penitus careat. Indiam Orientalem, et præcipue insulam Ceyloniam inhabitat Lemur Tardigradus. Mag-

nitudo ejus est fere felis junioris domesticæ. Coloris est pallide fusci: oculi autem circulis obscuris, seu fusco-nigricantibus cinguntur, qui supra caput coeuntes, lineam eodem colore continuatam per dorfi longitudinem ducunt.

Pellis illi est delicatula et mollissima. Facies est quasi antice truncata, naso subacuminato: oculi magni, valde convexi, perfectas velut hemisphærias repræsentant, iridibus coloris fere succinei. Digitus interior pedum posteriorum unguem acutum gerit; cæteri digiti ungues rotundatos et complanatos habent. Sylvas incolit, et fructibus vescitur; sed et animalia fertur devorare; aviculas scilicet; quod (ut mihi videtur) ob insignem tarditatem vix verisimile est. Alia est hujus generis species, vere diversa, huic nostræ tamen in multis similis, cuique etiam cauda deficit; sed multo minor, multo gracilior, et velocior; quam cum Lemure Tardigrado confundunt nonnulli auctores, et communiter nomine *Loris* cognoscunt.



London Published

May 1790 by W. B. Smith & Co. in Street.

THE
SLOW-PACED LEMUR.



GENERIC CHARACTER.

Six Cutting Teeth, and two Canine Teeth in each jaw.

Visage (generally) sharp-pointed.

Feet formed like hands, in the manner of apes.

SPECIFIC CHARACTER, &c.

TAIL-LESS LEMUR, of a subferruginous ash-colour, with a brown dorsal line.

TAIL-LESS MACAUCO.

Pennant. Hist. Quadr. p. 212.

This curious animal is sometimes improperly regarded as a species of Sloth, and has been called the Ceylon Sloth; but it is not in the least allied to that genus, and has only been so named from the slowness of its motions; in which it differs in the most striking manner from all other species of its own genus, which are animals of the most lively disposition, and the most vivid celerity of motion. Another peculiarity belonging to this creature, is the total defect of a tail, of which not so much as a vestige appears. It inhabits the East-Indies, and particularly the island of Ceylon. Its size

is nearly that of a young cat. Its colour a uniform palish brown, but the eyes are surrounded with circles of deep brown or blackish, which unite on the top of the forehead, and from thence a continued line of brown runs down the back. The fur on the whole animal is remarkably fine and soft. The face very flat, but the nose somewhat sharpened. The eyes are large and extremely convex, so as to appear like perfect hemispheres. The irides are amber-coloured. The inner toe of each hind-foot is furnished with a sharp, crooked claw, while the rest of the toes have flat, rounded nails. It inhabits woods, and feeds on fruit; but is likewise said to eat animal food, and to kill small birds, but this, on account of its extreme slowness, does not seem very probable.

There is another species of this genus, which agrees with this in many particulars, and is destitute of a tail, and has sometimes been confounded with it; but in reality it is a very different species; being much smaller, and having both limbs and body much thinner in proportion: it is called by several authors by the name of the *Loris*.

HELIX HORTENSIS.



CHARACTER GENERICUS.

Animal Limax.

Testa univalvis, spiralis, subdiaphana, fragilis.

Apertura coarctata, intus lunata, s. subrotunda :
segmento circulo dempto.

Lin. Syst. Nat. p. 1241.

CHARACTER SPECIFICUS, &c.

HELIX testa imperforata pallida, fasciis latis interruptis fuscis.

COCHLEA vulgaris major pulla maculata et fasciata hortensis.

List. Angl. tab. 2. fig. 2.

AN HELIX LUCORUM?

Lin.

Militat omnis amans, et habet sua castra Cupido :
Attice, crede mihi ; militat omnis amans.

Ov.

Helix vulgaris, seu ut communiter vocatur, Cochlea, in numero est animalium quæ ob vilitatem, formamque fordidam et abjectam, a plerisque contemni et negligi solent ; in quibus tamen plura fortasse discernere

cernere potest phycus quæ delectationem admirationemque excitent, quam vel in majoribus animalibus. Cochlearum enim anatomicæ adeo miraculis plena est, ut de variis illarum partibus integrum volumen posset componi. Cum vero longis ambagibus speciatim has minutias describere lectoribus plurimis molestum sit, breviter tantum illa percurremus memoratu dignissima. Oculi Cochlearum in summitatibus duorum longiorum tentaculorum, seu ut vulgo vocantur, cornuum siti sunt: quod licet a quibusdam phycis dubitatum sit, ab experimentis tamen et accuratissimis Swammerdamii investigationibus clare confirmatur: probatur quoque eos eisdem fere humores, tunicas, et vasa, quibus animalium majorum oculi instruuntur, continere. Non defuere qui Cochlearum cornua pro veris telescopiis naturalibus habuerunt, asserueruntque posse illas ea vel extendere vel contrahere pro distantia objecti ad quod oculos direxerint. Hæc autem idea structuram magis multimodam arguit, quam revera his organis tribuit Natura, et fortasse inter plurimas fit hæc hypothesis, quas ingenio suo indulgere solent nonnulli Naturæ speculatores.

Dentes Cochleæ sunt validi et acuti; omnesque corporis partes tam interiores quam exteriores ad animalis istius mores habitusque egregie accommodantur.

De miro generandi modo dicturus, lectores meos enixe orem necesse est ut nec me fabulas philosophicas fingere existiment, nec fidem suam deficere et immiui sinant.

Si quidem vera nobis referunt oculati Naturæ inter animalia inferiora investigatores, Cochlearum amores inusitato

inufitato et fibi peculiari quodam more promoventur ; femperque ipfum complexum præcedit mira formula, quæ pugnæ ftatariæ faciem omnino exhibet.

Cochleæ lascivientes mutua vota telorum parvulorum ic̄tibus, quæ peracuta funt et quasi cornea, fibi invicem communicant ; illisque refertam pharetram exiguam, in dextro latere cervicis fitam, quamdiu permanferit illis conjunctionis defiderium, intus geftant. Emiffo primo telo, illico refpondet Cochlea vulnerata, et fimile in amantem jaculatur ; ab illa telum alterum emittitur, rurfusque ipfa invicem percutitur ; Cupidinifque fagittæ, quas per omne ævum cecinit fervidum poetarum et amantium ingenium, in ipfa tandem Natura revera inveniuntur. Peracto hoc lepido prælio, coeunt Cochleæ, et deinde locum idoneum ubi ova fua deponant follicite quæritant ; humidum nempe et opacum recessum, vel fub terræ gleba, vel cavo aliquo tegmine. Rotunda funt hæc ova, magnitudine fere piforum parvulorum, coloris albi fubpellucis, et fubftantiæ mollis. Ex his excluduntur Cochleæ plene formatae, teftas fuas in dorfo ferentes, nec ullam aliam mutationem præter naturale molis incrementum fubeunt. Hortis et pomariis damnum non leve inferre folent Cochleæ, et notatu dignum eft, illas, fi defecerit cibus fucculentus, fructus nempe aut folia, corpora etiam dura et ficca rodere : memini enim egomet Helicem hortenfem, (qualis eft illa quæ hic depingitur,) fub vitro cujus diameter quatuor uncias fuperabat inclufam, fubstratam chartam communem cæruleam una nocte ufque ad ipfius vitri marginem devoraffe ; circulo relicto velut ab ipfo circino defignato.

Ab experimentis Spallanzanii aliorumque probatur, Cochleas, abscissa aliqua parte, repullulandi facultatem habere: ipse enim Spallanzanius Cochleæ caput abscidit, quod, elapso certo tempore perfecte regerminabat. Hujus experimenti veritas, licet a nonnullis denegetur, ab aliorum tamen doctissimorum physicorum testimonio satis comprobatur.

Quanquam variis intervallis sagittas suas jaculentur Cochleæ, fatendum tamen est tabulam repræsentare illas plus æquo a se invicem remotas. Plerumque propius accedunt; immo interdum fit ut telum ipsum, gladii instar, in corpore opposito infixum stet, dum Cochlea quæ jaculum emisit, recedit paululum, sagittam quasi commilitonis sui expectans.



Illustration published in May 1879 by F. P. Noddin of N. B. Canton Street.

THE
GARDEN SNAIL.



GENERIC CHARACTER.

The *Animal* a Slug.
Shell spiral, sub-pellucid.
Aperture semi-lunar.

SPECIFIC CHARACTER, &c.

SNAIL with a shell of a pale colour, with broad interrupted bands of brown.

The COMMON GARDEN SNAIL.

See to the fight the gentle warriors move,
And dart with harmless force the shafts of love!

The Snail is amongst the number of those animals which we are apt to overlook on account of their seemingly contemptible appearance, but which will perhaps open to our attentive survey a greater variety of curious particularities than most other creatures can exhibit. The anatomy of the snail is full of wonders, and a volume might be written on its history; but, without descending to a tedious narrative of all its parts, I shall only mention a few of the most remarkable ones. The eyes of Snails are situated on the tips of the two longest horns, and though their existence has

has

has been questioned by some Naturalists, yet the accurate research of SWAMMERDAM has sufficiently proved their real nature, and that they are furnished with nearly the same humours, coats, and vessels as in most of the larger animals. Some authors have supposed the horns to be a kind of natural telescopes, and that the animal shortened or lengthened them according to the distance of the objects to which it directed them; but this idea seems to imply a more complicated structure than can be found in this organ, and, I believe, must be given up as one of those ingenious hypotheses which are too frequently entertained by speculative enquirers.

The teeth of the Snail are sharp and strong, and all the internal as well as external parts of the creature are admirably calculated by Nature for the mode of life to which it is destined.

But the most wonderful part of the history of the Snail, is its manner of breeding; and I must request my readers to summon all their philosophical faith to receive the surprising particulars.

If the observations of the most profound enquirers into the operations of Nature amongst the lower orders of animals may be depended upon, the amours of Snails are conducted in a manner very different from those of most other creatures, and are always preceded by a very extraordinary ceremonial, which has all the appearance of a regular combat.

When these animals are disposed to love, they signify their mutual wishes by launching several little darts at each other. These darts are of a very sharp form, and of a horny substance, and the animals are provided with

with a little quiver or reservoir of them during the breeding season: this internal quiver or repository of the darts is situated within the neck, and opens externally on the right side. Upon the discharge of the first dart, the wounded Snail immediately retaliates upon the aggressor, and discharges a similar one; the other again renews the battle, and is again in its turn wounded; and thus the darts of Cupid, so long and loudly celebrated by poets and lovers, and which are metaphorical with all the rest of the creation, are here completely realized. When the animals have continued for some time the combat just described, a reconciliation takes place, and they unite; after which they are solicitous to deposit their eggs in a place of safety. For this purpose they choose a moist, cool situation, generally under some little clod, or in some small sheltered cavity, in which they place them: they are perfectly round; about the size of very small pease, of a semi-transparent white colour, and of a soft substance: from these the young are hatched completely formed, and with their shells on their backs, and undergo no farther change than a gradual increase of size.

The depredations which these animals commit in gardens and orchards is very considerable, and it is remarkable that in defect of moist succulent food, as fruit and tender leaves, they will even attack substances of a hard and dry nature. I have known the common garden Snail here figured, when confined for one night under a glass of more than four inches in diameter, which was placed on a sheet of common blue paper, entirely devour the whole paper contained in the included

ded space, to the very edge of the glass, so that a circular piece seemed almost as accurately taken out, as if marked by a pair of compasses.

From the experiments of SPALLANZANI and others, it appears that Snails are possessed of a very considerable degree of reproductive power. SPALLANZANI in particular, has found that the whole head of a Snail may be cut off, and yet in a certain space of time will be reproduced. This has been denied by some, but its truth is established by experiments conducted by the most careful and accurate observers.

It is necessary to add, that the Snails in the annexed plate, are represented at somewhat too great a distance from each other; this is a circumstance which admits of great variation, but in general the animals make a nearer approach before they dart their spicula; and in some particular instances they have been known to approach so near during this action, that the dart has been infixed in the manner of a sword, in which case the animal that discharged it, withdraws again to some little distance, and seems to wait for a similar attack.

SPARUS? FORMOSUS.



CHARACTER GENERICUS.

CAPUT : *Dentes incisores* vel *Laniarii* robusti;
Molares obtusiusculi, conferti. *Labia* duplicata.

Memb. branch. radiis 5. *Opercula* squamosa.

Corpus compressum. *Linea* lateralis postice curvata. *Pinnæ* pectorales rotundatæ.

Lin. Syst. Nat. p. 467.

CHARACTER SPECIFICUS.

SPARUS RUBER, corporis maculis longitudinalibus variis, apiceque caudæ, cæruleis.

Inter illos est pulcherrimus hic piscis quos in Systemate Naturæ non descripsit Linnæus. Secundum normam Linnæanam ad genus Spari referendus est. Fatendum sane est Spari et Labri characteres non satis accurate distingui, speciesque esse aliquas quæ æquali pene jure ad alterutrum genus pertinere videantur. Testis sit species de qua jam agimus, quamque Dominus ASCANIUS in Opere suo *Figures enluminees d'Histoire Naturelle du Nord* dicto, speciem *Labri esse voluit. Huic nostro maxime affinis esse videtur piscis, a Pennantio *Striped Wrasse* nominatus. Spari et Labri species
variis

* Et fortasse revera potius Labrus quam Sparus.

variis plerumque et vividis coloribus superbiunt ; ut plurimum quoque, pisces sunt exteri et adventitii ; at supradictus ille quem descripsit Pennantius, interdum circa littora Britannica conspicitur. Unde delatum fit individuum hoc specimen in tabula depictum, et adhuc in Museo Leveriano conservatum, nobis non satis liquet. Verisimile tamen est pisces esse Britannicum.

Figura nostra magnitudine naturali fere dimidio minorem illum repræsentat. Notatu dignum est nullam aut Labri aut Spari speciem in grandi illo Opere Ichthyologico Domini BLOCH fuisse depictam : quod sane magis mirandum, cum apud multos auctores horum piscium figuræ reperiantur quas ille commode satis, unde et alias plurimas mutuatus est, in Ichthyologiam suam transtulisset.



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THE
BEAUTIFUL SPARUS.



GENERIC CHARACTER.

Teeth (generally) strong, and somewhat obtuse.

Lips double.

Membrane of the *Gills* furnished (generally) with
5 rays.

Pectoral Fins of a rounded form.

SPECIFIC CHARACTER.

RED SPARUS, with the various longitudinal
marks on the body and the tip of the tail
blue.

The beautiful fish here represented, is amongst the number of those which are not to be found in the *Systema Naturæ* of Linnæus. The genus to which it belongs should, according to Linnæus's own rules, be that of Sparus; but it must be confessed that the characters of the two Linnæan genera of Sparus and Labrus are not quite sufficiently distinguished, and several species may be observed which might with almost equal propriety be referred to either genus. As a proof of this, I cannot but observe, that in the Work of ASCANIUS, entitled *Figures enluminees d'Histoire Naturelle du Nord,*

du Nord, this fish is given as a species of *Labrus*.*

It seems very nearly allied to the species which Mr. Pennant in his *British Zoology* has called the *Striped Wrasse*. The genera of *Sparus* and *Labrus* are both remarkable for the vivid colours which frequently adorn the species belonging to them. Most of them are natives of the extra-Britannic seas; but the striped Wrasse of Mr. Pennant, to which this fish is so nearly allied, has been sometimes caught on our own coasts. Where the individual specimen was taken, from which this figure was copied, and which is now in the Leverian Museum, I have not been able to learn; but there is reason for supposing it to be a British fish.

It is represented about half the size of the specimen itself.

It is singular that no species either of *Sparus* or *Labrus* has yet been figured in the superb *Ichthyology* of Dr. BLOCH; especially as there are not wanting numerous figures of these fish in the works of several authors, from whom he might have copied them with the same ease that he has done those of a great many other fishes introduced in the course of his Work.

* And perhaps it is really rather a *Labrus* than a *Sparus*.

ANAS OCCIDUA.



CHARACTER GENERICUS.

Rostrum lamellofo-dentatum, convexum, obtusum.

Lingua ciliata, obtusa.

Lin. Syst. Nat. p. 194.

Ord. *Anseres*.

CHARACTER SPECIFICUS, &c.

ANAS albo-variata, fascia frontis occipitifque vi-
rente, pennis scapularibus falcato-dependen-
tibus, rostro-pedibusque nigris.

ANAS STELLERI.

Pall. Spic. 6. p. 35. t. 5.

Anatis perpulchra hæc species nomen habet a pa-
tria; Americæ quippe littora occidua præcipue in-
habitat. In Kamtschatka etiam invenitur, ubi in ru-
pibus inaccessis pullos suos educat. Gregatim con-
volant hæ Anates, nec unquam, ut perhibent, rivos
intran, sed in littoribus maritimis semper degunt.

A specimine eximio hujus avis in Museo Leveriano,
conservato, figuram hanc nostram depingi curavimus;
ab eodem etiam specimine figuram suam in Zoologia
Arctica expressit Pennantius. Magnitudine Anatem
Penelopen æquat.

THE
WESTERN DUCK.



GENERIC CHARACTER.

Bill broad and flattened; the edges marked with sharp lamellæ.

Tongue broad and ciliated at the edges.

SPECIFIC CHARACTER, &c.

VARIEGATED DUCK, with a frontal and occipital band of green; the scapular feathers falcated downwards; the bill and legs black.

WESTERN DUCK.

Latb. Synops. 3. p. 532.

Pennant. Arct. Zool. p. 564.

The beautiful species of Duck here represented, is named the Western Duck from its having been principally found on the western coasts of America; but it is likewise an inhabitant of Kamtschatka, where it breeds amongst inaccessible rocks. It is said to fly in flocks, and never to enter the mouths of rivers, but to confine itself to the sea-coasts. The elegant specimen in the Leverian Museum was the individual from which this figure was taken: Mr. PENNANT'S figure of this bird in the Arctic Zoology was also drawn from the same specimen. The size of this species is nearly that of a Wigeon.



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MACROPUS GIGANTEUS.



CHARACTER GENERICUS.

Dentes primores superiores 6, emarginati.

Inferiores 2, validissimi, acuminati, antrum porrecti.

Molares utrinque 4? remoti.

Pedes antici brevissimi; postici longissimi.

Folliculus abdominalis. (Fœminæ)

G. S.

CHARACTER SPECIFICUS, &c.

MACROPUS cauda sensim attenuata.

G. S.

YERBOA GIGANTEA.

Zimmerman. 526.

KANGUROO OPOSSUM.

Pennant. Hist. Quadr. p. 306.

Inter quadrupedes anomalum omnino et singulare est animal *Kanguroo* dictum. Genus a PENNANTIO disponitur nomine *Didelphis* seu *Opossum*, cui sane maxime est affine. Affine tamen est et Murini generis certis speciebus, quas describit LINNÆUS, quibus pedes posteriores insolitæ sunt longitudinis, pedesque anteriores insolitæ brevitatis. Inter illas est species valde singularis, communiter *Jerboa* nominata, quæ a LIN-

NÆO Mus Jaculus dicta est, cui gestus situsque corporis sunt avi similes, pedibus utpote posterioribus tantum insistenti, anterioribus non nisi inter edendum, et terram pro cubili scalpendum utenti. Differt in hoc *Kanguroo* a *Ferboa*, quod dum pedibus tantum posterioribus quiescit, metatarsum? adeo productum habet ut primo intuitu tota velut tibia videatur terræ inniti: at *Ferboa* pedibus solis nititur. *Kanguroo* fœmina faculum habet in abdomine, ut et vulgaris seu magna *Didelphis*. Utrique maxillæ insunt quatuor? dentes molares, ab aliis dentibus remoti. Maxillæ superiori insunt sex dentes incisores, validi, lati, paulum bifidi, seu medio leviter exciso. (emarginati.) In fronte maxillæ inferioris sunt dentes duo prominentes, maximi, validissimi, acutissimi. Pedes anteriores in quinque digitos longos divisi sunt, unguibus acutis munitos. Pedum autem posteriorum forma est valde singularis; Primo intuitu tridactyli apparent, digitis nempe tribus instructi. Digitus medius validissimus, maximus, ungue itidem maximo et validissimo armatus. Digiti laterales utrinque minores sunt, unguibus proportionatis; quorum interior, si prope conspicitur, duplex videtur, sive ex unguibus duobus valde vicinis constans. Pedes itaque posteriores revera sunt tetradactyli, seu digitis quatuor instructi. Hæc observatio (quæ, ut videtur primos spectatores effugit,) certe est accurata; possit etiam esse utilis; affinitatem enim maximam demonstrat inter hanc speciem et aliam a pictore *Le Brun* nomine *Philandri* descriptam, in qua unguis interior duplex plane conspicitur. In alia quoque *Kanguroo* specie Novam Hollandiam cum *Kanguroo* magno incolente

lente, eadem observatur pedis structura. In suo genere *Kanguroo* est species facile maxima; utpote ovi adultæ magnitudine par. Caput collumque, cum parte corporis superiore gracilia sunt; corporis autem pars posterior permagna est et carnosâ. Infolitæ est agilitatis, saltibus altis adeo et longis progrediens, ut canes *Græci* dicti facile ab illo in cursu superentur.

Novam Hollandiam incolit *Kanguroo*, ibi frequenter conspectus. Victum præbet non insalubrem. Vegetabilibus folis vescitur.

THE
GREAT KANGUROO.



GENERIC CHARACTER.

Six *Cutting Teeth* in the upper jaw, slightly emarginated.

Two very strong, sharpened *Teeth* in the lower jaw, pointing forwards.

Grinders on each side 4? distant from the other teeth.

An *Abdominal Pouch*. (in the female.)

G. S,

SPECIFIC CHARACTER, &c.

KANGUROO, with the tail gradually attenuated.

G. S.

KANGUROO OPUSSUM.

Pennant. Hist. Quadr. p. 306.

KANGUROO.

Cook's Voyage. 3. p. 577.

The Kanguroo is a very anomalous and extraordinary quadruped. The genus to which it bears the greatest affinity, is that of *Didelphis* or *Opossum*, in which
genus



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genus it is placed by Mr. PENNANT; but it has also some affinity with those species of the Linnæan genus Mus, which are furnished with hind legs of a very remarkable length, and fore-legs as remarkably short. One of the most singular of these is the creature called the Jerboa, which is the Mus Jaculus of Linnæus; an animal which has the general actions and attitudes of a bird; standing on its hind legs, and making use of the fore-legs only in feeding and in scratching or burrowing in the ground.

The Kangaroo, like the Jerboa, rests only on its hind legs, but the whole metatarsus? having the appearance of the tibia, rests on the ground, whereas the Jerboa more frequently seems to stand on the feet alone. The female Kangaroo is furnished with a ventral pouch, in the same manner as the large or common Opossum. In each jaw there are 4? grinding teeth, or dentes molares; these are situated backwards, at a distance from the front-teeth. Of these, *viz.* the front or cutting teeth, (*incisores,*) there are 6 in the upper jaw, of a broad shape, and appear as if approaching to a bifid figure, or with a part cut out from the middle edge (*emarginated*). In the front of the lower jaw are two extremely large, sharp, and strong teeth, which incline forward. The fore feet are divided into five longish toes, with sharp claws; but the structure of the hind feet is extremely remarkable. At first view, the foot seems to be tridactylous, or to consist of three toes; the middle toe is most uncommonly strong and large, and furnished with a claw of proportional magnitude; the side toes are much smaller, and the
claw

claw of the interior one, if closely examined, will be found to be double, or to consist of two claws very close to each other; so that in reality, the hind feet are tetradactylous, or have four claws. This particular, (which seems to have escaped the first observers) is both curious and important, as it seems to shew how very nearly this animal is allied to another anomalous species of quadruped, which has long ago been described by Le Brun, the painter, under the name of the Philander, in which the same particularity (*viz.* the double inner claw) takes place; as likewise in a small species of Kangaroo, which, like the large species here figured, inhabits New Holland.

The tail of the Kangaroo is very long, and gradually tapers to the end.

The Kangaroo is by far the largest animal of its genus; being as large as full-grown sheep. Its head and neck, and whole upper parts are very slim and delicate; while the lower part of the body is very large and muscular. It is a creature of surprising agility, and springs forwards, by leaping to so uncommon a height, and to so great a distance, as to outstrip the fleetest pursuit; the swiftest greyhound being easily and soon distanced by this wonderful quadruped.

It is a native of New Holland, where it is found in plenty, and is esteemed a useful article of food.

SCARABÆUS HERCULES.



CHARACTER GENERICUS.

Antennæ clavatæ capitulo fissili.

Tibiæ anticæ sæpius dentatæ.

Lin. Syst. Nat. p. 541.

CHARACTER SPECIFICUS, &c.

SCARABÆUS scutellatus, thoracis cornu incurvo maximo: subtus barbato unidentato, capitis recurvato: supra multidentato.

Lin. Syst. Nat. p. 541.

Rösel. Inf. 2 *Scarab.* 1. tab. A. fig. 1. et *Inf.* 4. tab 5. fig. 3.

Edw. Av. tab. 334.

Quis, ait celeberrimus BUFFONUS, efficit ut de summo mundi Creatore altius sublimiusque concipiamus? an ille qui soles et planetas potestate sua formantem, mundorumque circulos gubernantem depingit; an qui apum œconomiam ordinantem, aut alas Scarabæi ferio et fedulo plicantem? Talis equidem tanti viri sententia *Historiæ Naturalis* minutiores partes investigantibus foret inimicissima, utpote vix hominis literati studio dignas,

dignas, aut faltem præ majoribus et nobilioribus Zoologiae partibus fordidas, niſi quod et alii de hac re cenſuerint in eadem ponamus trutina; viri nempe non minus ingenio vivido et pollenti, quam virtute per omne ævum laudandi. Perilluſtris Boylius breviter et nerveſe ſuam ita ſententiam edidit; ſe non tam Naturæ majoribus horologiis, quam parvulis et minutis ſtupeſcere; Deumque plane dixit eſſe maximum in minimis. Et proſecto ſi elephantis aut rhinocerotis molem giganteam miramur, acarum attoniti contemplemur neceſſe eſt, cui plura ſunt membra, corpusque magis complicatum quam animalibus majoribus. Ad ſummum vero augetur nobis admiratio, innumera iſta animalcula explorantibus, quæ non niſi microſcopii ope videnda ſunt; quibus vel ipſe acarus eſt quaſi elephas. Immortalis PLINII ſententia de his parvulis Naturæ operibus ex ipſius verbis conſtat. “In his tam parvis, tamque fere nullis, quæ ratio! quanta vis! quam inextricabilis perfectio!”

Inſectum vero, quod nunc deſcribere pergimus, nequaquam ad minora inſecta pertinet, ſed inter maximas ſui generis ſpecies numeratur. Phyſicis probe cognitum eſt, et a multis deſcriptum. Americam incolit calidiorẽ, et inter alios ſcarabæos præminet cornu in vaſtam longitudinem e thorace extenſo necnon alio cornu a capite orto, et ſurſum tendente, donec cornu thoracis pene occuſet. Cornu ſuperius ſuperficiem habet inferiorem villo, ſeu tomento denſo holoſerico elegantiffime veſtitam. Inſecta hæc (ut fertur) Mammææ Americanæ ramulos cornubus complexa, circum-gyrando vulnerant, ut humorem ab arbore incifa ſtillantem

stillantem forbeant ; quo mox inebriata in terram decidunt, et facillime capiuntur. Huic tamen famæ, ut doctus observat FABRICIUS, fides non temere habenda est, quoniam, ut antea diximus, cornu, cui superficies inferior barbata est, hoc modo abrasum omnino denu- daretur. Infectum hoc, ob molem insignem, optimum præbet exemplum characteris generici. Magnitudine multum variat. Dubitari etiam merito potest, annon minora aliqua specimina veluti speciem diversam descripserint auctores ; exempli gratia Scarabæum Alciden FABRICII, adeo huic nostro affinem, at vix probe separari queat, quamvis multo fit minor, cornuaque minus conspicue dentata gerat.



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and guiding the revolutions of worlds, or he who discovers him busied in regulating the œconomy of an hive of bees, or deeply engaged in folding the wings of a beetle? Such an observation, from so elevated a character, might be capable of exciting a very wrong and unfavourable idea, with respect to the study of the smaller branches of Natural History; as if unworthy of any considerable share of attention, or at least of but slight importance, when compared with the higher orders of Zoology. But let us recollect the sentiments of other men, of the most comprehensive minds, the most brilliant abilities, and the most exalted piety and virtue.

The celebrated Mr. BOYLE used to express himself on this subject in a somewhat singular phrase, viz. That for his own part, his wonder dwelt not so much on the clocks as the watches of Nature; and that the Creator appeared in reality to be *maximus in minimis*. If we are struck with admiration at the prodigious bulk of the elephant, or the rhinoceros, we are lost in astonishment at the contemplation of a mite, for in that animal there is a more complicated structure, and a greater variety of parts than in the larger animals; and how must this astonishment increase, when we contemplate by the help of glasses, those innumerable legions of animalcula, compared to which, a mite may itself be regarded as a kind of elephant.

The opinion of PLINY on the minuter parts of Nature is evident, from his own words. “ In his tam parvis tamque fere nullis quæ ratio! quanta vis! quam inextricabilis perfectio! ”.

The

The insect, however, which makes its appearance on the present plate, is not amongst those of the smaller order; but on the contrary, is one of the most gigantic animals of the class to which it belongs. This curious creature has long been known to the admirers of Natural History, and has been figured by several authors. It is a native of the warmer parts of America, and is remarkable for the excessive length of the horn, which proceeds from its thorax, as well as for another horn which proceeds from its head, and bends upwards, so as almost to meet the thoracic one. The uppermost of these horns, or processes, is most curiously coated on the inner surface, with a fine hair or velvet-like substance.

It has been said that these insects have a custom of taking hold of the slender branches of the *Mammæa Americana*, and swinging themselves round with such rapidity, as to wound, by this circular motion, the branch on which they fasten, in order to be enabled to suck the juice distilling from the tree; by which they are soon inebriated, so as to fall in great numbers on the ground, and to be easily taken. But this account, as the learned FABRICIUS has well observed, seems not very probable; since the thoracic horn being bearded on its lower surface, would undoubtedly be made bare by this operation. This Insect, from the remarkable size of all its parts, affords an admirable example of the characters of the genus to which it belongs.

It varies much in size, and it may even be much doubted whether some of the smaller specimens have not been regarded as distinct species by authors: such, for instance, is the *Scarabæus Alcides* of FABRICIUS, which

which seems fo extremely nearly allied to the Hercules, as scarce to admit of separation, notwithstanding its size, which is hardly more than half that of the former; and the horns not furnished with such remarkable denticulations as in the Hercules.

PSITTACUS PULLARIUS.



CHARACTER GENERICUS.

Rostrum aduncum : mandibula superiore mobili,
cera instructa.

Nares in rostri basi.

Lingua carnosæ, obtusa, integra.

Pedes scanforii.

Lin. Syst. Nat. p. 139.

CHARACTER SPECIFICUS,

PSITTACUS brachyurus viridis, fronte rubra,
cauda fulva fascia nigra, orbitis cinereis.

Lin. Syst. Nat. p. 149.

PSITTACUS GUINEENSIS.

Edw. Av. t. 237. f. 1.

Lath. Synops. 1. p. 309.

In caveis inclusam hanc aviculam plerique tam frequenter conspexerunt, ut hoc ipsum ab admiratione detrahat quam aliter sibi vindicaret excellens pulchritudo. Historiæ naturalis cultoribus tam probe cognita est hæc species, ut illam peculiariter describere non sit necesse : fatis sit dicere speciem esse pulcherrimam ; moresque ejus suaves et mansuetos formæ tam

eximiæ bene respondere. Africæ est indigena, et in Guinea frequentissima est. In India etiam Orientali invenitur. Nomen ejus Anglicanum commune est *Guinea-Sparrow*.



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By W. P. A. Under. of P. 1.3. Boston, New.

T H E
G U I N E A P A R R A K E E T .



G E N E R I C C H A R A C T E R .

Bill hooked. Upper mandible moveable.
Nostrils round, placed in the base of the bill.
Tongue fleshy, broad, blunt at the end.
Legs short. Toes formed for climbing, viz. two backward and two forward.

Linnæus and *Pennant*.

S P E C I F I C C H A R A C T E R , &c.

SHORT-TAILED GREEN PARROT, with red front; tail fulvous with a black bar; orbits of the eyes grey. *Lin.*

RED-HEADED GUINEA PARRAKEET.

Latham, fol. 1. p. 309.

This beautiful little bird is so often seen in cages, that the circumstance of its not being a rare species seems in some degree to lessen the admiration due to its uncommon elegance. As it is so well known to Naturalists, it is unnecessary to say more than that it is one of the most brilliant of its genus, and that the beauty of its appearance is equalled by the gentleness

of its manners. It is an African bird, and abounds in Guinea. It is also found in the East Indies. In England this bird is generally called by the name of the Guinea-Sparrow.

MANIS TETRACTYLA.



CHARACTER GENERICUS.

Dentes nulli.

Lingua teres, extensilis.

Os angustatum in rostrum.

Corpus squamis tectum.

Lin. Syst. Nat. p. 52.

CHARACTER SPECIFICUS, &c.

MANIS pedibus tetradactylis.

Lin. Syst. Nat. p. 53.

LACERTUS squamosus peregrinus.

Clus. Exot. 374.

Tam prope accedit hæc Manis species ad similitudinem Manis Pentadactylæ, in priore numero hujus operis depictæ, ut a quibusdam physicis varietas potius quam species distincta censeatur. Linnæus etiam ipse, cum characterem illi specificum statuerit, addit, “ præcedenti nimis affinis.” Caudæ tamen longitudo, quæ in omnibus speciminibus a meipso observatis, illam Manis Pentadactylæ longe superat, squamæque magis oblongæ, acuminatæ etiam et striatæ, seu fulcatæ, nec non corporis forma gracilior, cum aliis differentiis, quæ accurate perpendenti physico patebunt, clare demonstrant

monstrant hanc speciem alteram omnino et diversam esse. Quod ad habitus vitæque mores attinet, ea omnia in historia alterius speciei antea descriptæ numerantur. Nihil igitur restat, quin ut illam ipsam descriptionem adeat lector.



J. V.

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THE
FOUR-TOED MANIS.



GENERIC CHARACTER.

No Teeth.

Tongue cylindric and extenfile.

Mouth narrowed into a snout.

Body covered with scales.

SPECIFIC CHARACTER, &c.

MANIS with tetradactylous (or four-toed) feet.

Lin.

LONG-TAILED MANIS.

Pennant. Hist. Quadr. p. 504.

This species of Manis makes so very near an approach to the Manis Pentadactyla, figured in a former number of this work, that it has been regarded by some Naturalists as a variety rather than a distinct species; and Linnæus in his *Systema Naturæ*, after giving its specific character, observes that it is almost too nearly allied to the other to be regarded as distinct. The length of the tail however, which in all the specimens I have ever observed, very greatly exceeds the proportion of the same part in the former species, as well as the more oblong and even acuminate form of the furrowed or striated scales, together with a greater degree of slenderness in the

the

the body, and some other particulars which an attentive survey discovers, seem clearly to prove a real specific difference. In point of general habits and mode of life nothing need be added to what has been already said of the other species, or *M. Pentadactyla*, to which the reader is therefore referred for its history.

FULGORA LANTERNARIA.



CHARACTER GENERICUS.

Caput fronte producta, inani.

Antennæ infra oculos: articulis 2; exteriore globofo majore.

Rostrum inflexum.

Pedes gressorii.

Lin. Syst. Nat. p. 703.

CHARACTER SPECIFICUS, &c.

FULGORA fronte ovali recta, alis lividis; posticis ocellatis.

Lin. Syst. Nat. p. 703.

LANTERNARIA.

Mex. Sur. t. 49.

Rösel. Inf. 2. gryll. t. 28, 29.

Fabr. Spec. Inf. vol. 2. p. 313.

Vix aliud in Insectis videtur mirabilius luce illa phosphorea, quam certæ species emittunt. Inter insecta Europæa, Lampyrides, (quæ ad *Coleoptera* Linnæi referuntur) maxime hac qualitate pollent. In America est species Elateris, cui multa inest vis lucem in tenebris spargendi. Scolopendra etiam vulgaris Europæa, (quæ *Scolopendra electrica* Linnæi) manifeste noctu
lucet,

lucet, præsertim si aliquo modo sit irritata aut compressa. Præ cæteris tamen insectis eminet species in tabula depicta, quæ communiter *Lanternaria Peruviana* dicitur: lucem enim adeo vividam spargit, ut viatores noctu ambulantes iter suum commode peragere possint, ope unius vel duorum horum animalium, baculo alligatorum, gestatorumque more facis. Insectum hoc ad ordinem naturalem pertinet insectorum quatuor alas habentium, quarum exteriores sunt magis coriaceæ seu densæ in parte superiore quam inferiore. Hujus ordinis insecta *Hemiptera* Linnæi constituunt, inter quæ major pars rostrum tubulatum sub pectore gerunt, cujus ope fugendo se nutriunt. Hinc patet Fulgoram et Cicadam esse valde affines. Fulgora frequens in America calidiori reperitur, et a Domina Merian in historia sua insectorum Surinamensium nec non ab aliis Naturæ indagatoribus descripta est. Non injucunde narrat Merian metum sibi ingentem incussisse flammeas coruscationes ab insectis hisce exortas, cum adhuc facultatis quam habent lucem in tenebris emittendi ignara esset. “Cum aliquando (inquit illa) *Lanternarios* magna copia mihi attulissent Indi, scatulæ eisdem majori ligneæ inclusi, illos noctu lucere adhuc inscia; verum de nocte insolito strepitu expergefacta, et perterrita, e lecto profiliens, lumen accendere jussi, quis domi meæ insuetus esset strepitus ignara. Tum vero e scatula stridorem profectum illico nobis patuit; illam itaque cum animi quadam perturbatione aperuimus, sed adaperitam magis adhuc paventes in terram subito dejecimus, quod inter aperiendum inde velut ignea erumperet flamma, toties refulgens quoties novum
evolaret

evolaret infectum: quo tandem animadverso, ad nos redeuntes, iterum congregavimus animalcula, splendorem in ipsis plurimum demiratae.” Ope etiam unius infecti, ut affirmat Merian commode aliquis noctu legere potest.

Non abs re sit addere quod quamvis Domina Merian figuras horum animalium pulchre et accurate depingi curaverit, tamen transformationem ipsius infecti a larva ad integrum statum describere conata, figuram, ut videtur, fictam introduxit, nempe cicadae speciem (quae Cicada Tibicen Linnæi) cum capite Fulgoræ.

Lux phosphorea a Fulgora dimanans, a capite concavo seu velut inflato procedit: nulla enim alia pars phosphorea est.

THE
GREAT LANTHORN-FLY,
OR
FIRE-FLY.



GENERIC CHARACTER.

Head hollow, inflated, and produced forwards.
Antennæ below the eyes, consisting of 2 joints,
the exterior larger and globose.
Beak inflected.
Feet formed for walking.

SPECIFIC CHARACTER, &c.

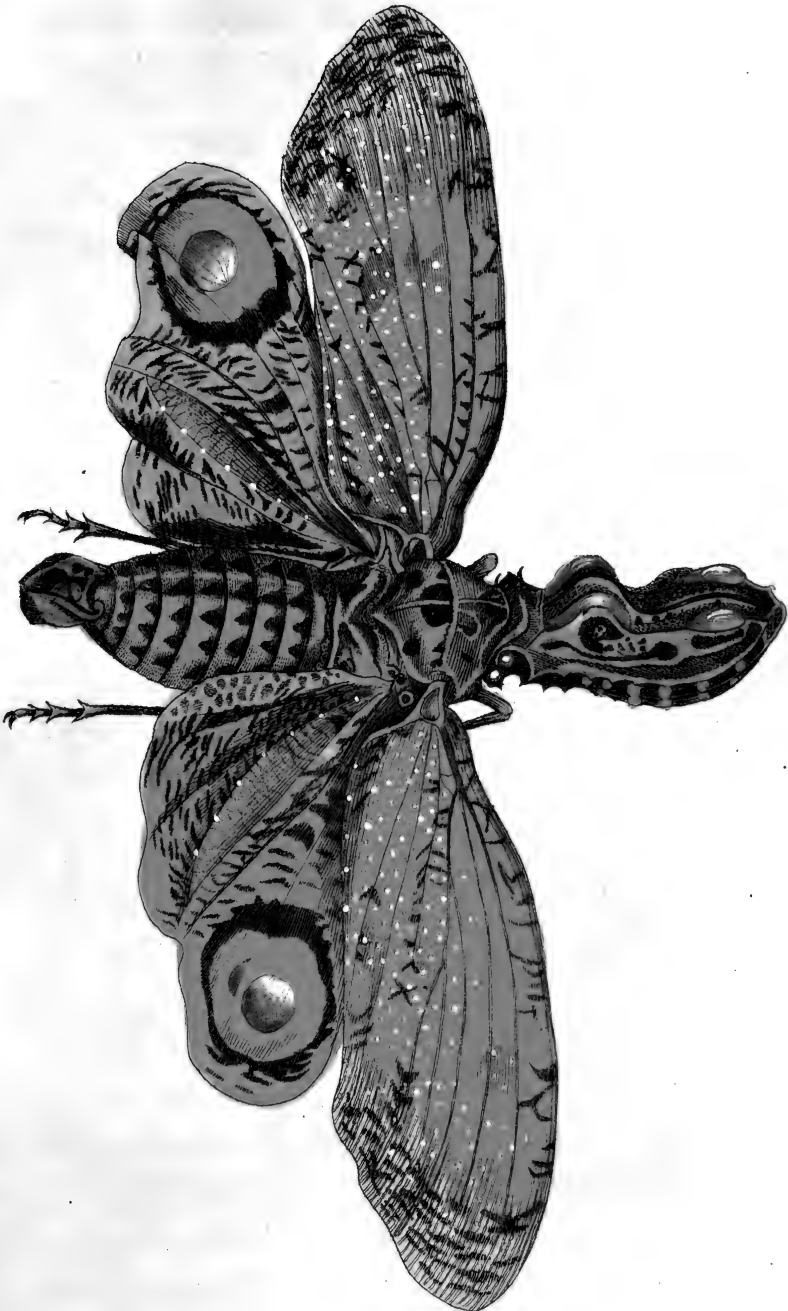
FULGORA with large oval head; variegated
wings; the lower pair ocellated.

LANTERNARIA.

Merian. Sur. t. 49.

Rösel. vol. 2. t. 28, 29.

Few circumstances are more remarkable amongst insects than the phosphoric light with which some particular species abound. Amongst the European insects this quality is most conspicuous in the Glow-Worms, which are of the Linnæan genus *Lampyris*, and belong to the Coleopterous tribe. In America a large species of *Elater*, or Springing-Beetle is possessed of this faculty
in



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in a very high degree ; the common small Scolopendra of Europe, and which is well known in our own country, is pretty strongly phosphoric likewise, especially if pressed or irritated ; but of all insects that which is here represented, and which is generally called the Lanthorn-Fly of Peru, possesses this lucid quality in the most eminent degree, and affords a light so vivid, that travellers walking by night are said to be enabled to pursue their journey with sufficient certainty by one or two of these insects tied to a stick and carried in the manner of a torch. The insect belongs to the natural order of Hemipterous insects, or such as are furnished with four wings, of which the exterior pair on the upper part are of a stronger or more coriaceous nature than on the lower. The division in this tribe to which it strictly belongs, is that containing the rostrated insects, or such as have a tube or instrument of suction lying flat, beneath the breast. It is therefore extremely nearly allied to the genus Cicada. It is common in many parts of South America, and amongst other writers is described by the celebrated Madam Merian in her history of the Surinam insects. She gives an entertaining account of the alarm into which she was thrown by the flashing which proceeded from them in the dark, before she had been apprized of their shining nature.

“ The Indians once brought me (says she) before I knew that they shone by night, a number of these Lanthorn-Flies, which I shut up in a large wooden box. In the night they made such a noise that I awoke in a fright, and ordered a light to be brought, not being able to guess from whence the noise proceeded :

as soon as we found that it came from the box, we opened it, but were alarmed still much more, and let it fall to the ground in a fright at seeing a flame of fire come out of it; and as many animals as came out, so many flames of fire appeared. When we found this to be the case, we recovered from our fright, and again collected the insects, much admiring their splendid appearance." She adds, that the light of one of these insects is so vivid that a person may see to read a newspaper by it.

It may not be improper to observe, that though Madam Merian has given good figures of the Fire-Fly, yet, by way of explaining the change from its supposed larva into the complete insect, she seems to have introduced an imaginary figure, representing the Cicada Tibicen with the head of a Fulgora. The light emitted by the Fire-Fly proceeds entirely from the hollow part, or Lantern of the head; no other part of the animal being luminous.

I N D E X.

PLATE **A**CTINIA Anemone.

- 26. 27. Alcedo cristata.
- 32. Anas occidua.
- 5. Anguis Scytale.
- 12. Aranea avicularia.
- 24. Boa canina.
- 6. Bradypus tridactylus.
- 19. Certhia formosa.
- 8. Draco volans.
- 37. Fulgora Lanternaria.
- 14. Gorgonia Flabellum.
- 30. Helix hortensis.
- 20. Hydra viridis.
- 21. Lacerta Monitor.
- 29. Lemur tardigradus.
- 33. Macropus giganteus.
- 11. Manis pentadactyla.
- 36. Manis tetradactyla.
- 10. Motacilla superba.
- 3. Moschus pygmæus.
- 23. Ophrys apifera.
- 28. Papilio Polymnestor.
- 15. Papilio Priamus.
- 2. Phalæna Atlas.
- 7. Pfittacus Porphyrio.
- 1. Pfittacus porphyrocephalus.
- 16. Pfittacus porphyrurus.
- 35. Pfittacus pullarius.
- 17. Rana Pipa.
- 34. Scarabæus Hercules.
- 9. Scolopendra morfitans.
- 18. Sphinx ocellata.
- 25. Strix nebulosa.
- 22. Strix pulchella.
- 31. Sparus? formosus.
- 4. Tanagra Tatao.

I N D E X.

PLATE **A**CTINIA Anemone.

- 34. Beetle Hercules.
- 28. Butterfly Polymnestor.
- 15. Butterfly Imperial Trojan
- 19. Creeper shining
- 32. Duck Western
- 8. Dragon flying
- 37. Fire-fly.
- 14. Gorgonia Fan.
- 33. Kangaroo great
- 13. King-fisher crested
- 29. Lemur slow-paced
- 21. Lizard monitory.
- 11. Manis five-toed
- 36. Manis four-toed
- 2. Moth Atlas
- 3. Musk pygmy
- 23. Orchis Bee
- 25. Owl clouded
- 22. Owl least horned
- 1. Parrot purple-headed
- 7. Parrot violet-blue
- 16. Parrot purple-tailed
- 35. Parrot Guinea
- 20. Polype green
- 6. Sloth three-toed
- 30. Snail garden
- 12. Spider bird-catching
- 18. Sphinx ocellated
- 31. Sparus? beautiful
- 5. Snake painted
- 24. Snake dog-headed
- 9. Scolopendra great
- 4. Tanagra Paradise
- 17. Toad Surinam
- 10. Warbler superb



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