

PLATE XI.

Fig. 1. A dissection, showing the course of the œsophagus through the splanchnic skeleton of *Echinus sphæra*.

a. The œsophagus (cut end). *b.* The ligaments of the œsophagus.

Fig. 2. The antambulacral, or anal ring of plates of *E. sphæra*.

a. The genital plates. *a'.* The madreporic genital plate. *a''.* The genital orifice. *b.* The inter-genital plates. *b'.* The ambulatory orifice. *c.* The plates of the peripygial membrane. *d.* The position of the anus.

The following list of additions made to the Menagerie, by gift, purchase, and exchange, during the month of December, 1860, was read :—

1 Macaque Monkey	<i>Macacus cynomolgus</i>	Kennet Harris, Esq.	} Presented by
2 Wedge-tailed Eagles.....	<i>Aquila fucosa</i>	Dr. Mueller.	
2 Beavers	<i>Castor canadensis</i>	} Hon. Charles Ellis.	
1 Alligator.....	<i>Alligator lucius</i>		
2 Horned Lizards	<i>Phrynosoma cornutum</i>	} Richmond, Esq.	
1 Bonnet Monkey.....	<i>Macacus radiatus</i>		
1 Capuchin Monkey	<i>Cebus capucinus</i> ?	H. Alexander, Esq.	}
1 Bahama Duck	<i>Pecilonetta bahamensis</i>		
2 American Boas	<i>Eunectes murinus</i>	} Received in exchange.	
1 Ariel Toucan	<i>Ramphastos ariel</i>		
1 Tapir	<i>Tapirus americanus</i>		
1 Axis Deer, fem.	<i>Cervus axis</i>		
2 Ruddy Shieldrakes	<i>Casarca rutila</i>		
1 Purple Kaleege	<i>Gallophasis horsfieldii</i> ...	} Purchased.	
1 Suricate	<i>Suricata zenic</i>		
2 Rheas	<i>Rhea americana</i>		
1 African Horned Owl.....	<i>Bubo lacteus</i>		
2 Touracos	<i>Corythaix buffoni</i>		
5 Plantain-eaters	<i>Musophaga violacea</i> ...		
1 Grison	<i>Grisonia vittata</i>		
3 White-fronted Geese.....	<i>Anser albifrons</i>		
4 Linnets	<i>Linota cannabina</i>		
2 Twits	<i>Linota montium</i>		

Of these, *Bubo lacteus* was stated to be exhibited for the first time.

February 26th, 1861.

John Gould, Esq., V.P., in the Chair.

Dr. P. L. Sclater exhibited a living specimen of a Water Tortoise (*Chelodina longicollis*) from South Australia. In answer to inquiries as to the exact locality of this animal, Mr. Paul Joske, by whom it was presented to the Society's Menagerie, had replied as follows :—

“ The Tortoise you refer to was found at a village called Hawthorne, on the River Yarra. The same animal is also to be met with in the Ovens district, in the immediate neighbourhood of the creeks. It feeds on the young and tender leaves of grasses and other succulent vegetation, and is popularly known as the Snake-Tortoise.”

The following papers were read :—

1. ON THE ANATOMY OF *REGENIA OCELLATA*. BY DR. A. GÜNTHER, FOR. MEM. Z.S.

The specimen of *Regenia ocellata* which lived in the Society's Menagerie for nearly half a year came from the West Coast of Africa and was 35 inches in length, and $20\frac{1}{2}$ in its greatest circumference. It was very sluggish in its habits, and made more lively movements only when taken out of the cage and handled for some minutes; it then attempted to free itself by strokes of its powerful tail. The body always appeared broad, swollen, depressed; but its extent would be considerably increased, by inflation and expansion of the lungs, whenever it was touched. When first brought to the Gardens, it was offered frogs, fishes, and other living animals, but it never touched them, and, unlike other *Monitores*, it did not take to the water; subsequently it was fed with eggs and small pieces of meat.

The structure of the internal parts is very much like that of the other Saurians of the family *Monitores*, showing, however, some very remarkable peculiarities. The *tongue* is entirely the same as in the Snakes, except that it is flesh-coloured, and the anterior portion of the two points in which it terminates is cartilaginous, although soft and flexible; it is retracted into a thin and short sheath at its base, and stretched out as frequently and as far as that of a snake*. The pharynx and the upper part of the œsophagus are of a black colour. The latter passes without distinct separation into the *stomach*, which has an elongate rounded form, one side being so much more dilated than the other that it may be called a *curvatura major*; its muscular membrane becomes more developed in the pyloric portion, and forms a true pylorus.

The commencement of the intestine is very peculiar: the portion behind the pylorus is for the length of 9 lines without any villi, but provided with numerous small glands; it is a *duodenum*, which is separated from the small intestine by a broad circular valve, at least $2\frac{1}{2}$ lines deep: this valve, which is absent in *Iguana*, shuts the duodenum in so effective a way, that it requires considerable pressure to drive fluid backwards from the small intestine into the stomach. The *valvulæ conniventes* commence immediately behind that valve, and are provided with numerous very delicate and branched villi; they become more irregular towards the middle of the length of the intestines, and the folds of the mucosa assume a reticulated appearance, and are finally longitudinal in the middle part of the small intestine; the villi are here coarser and less numerous than in the upper portion, and not more fringed, having an average length of 2 lines. They cease altogether in the posterior part, in the *ilium*, whilst collections or rounded ovate patches of glands (*glandulæ Peyerianæ*) make their appearance; they are seen on the mesenterial side of the ilium as well as on the border opposite it. The opening of the ilium into the *cæcum* is comparatively small; and the latter is separated from the rectum by a fold of the mucosa, which is at least

* The lower parts of the cavity of the mouth had been taken away before the specimen came into my hands.

8 lines broad. The length of the small intestine is 29 inches, that of the rectum, with the cæcum and cloaca, 3 inches.

The *liver* is large, divided by a comparatively small notch into a right and left lobe, the former being somewhat the larger. The gall-bladder is imbedded in an excavation of the substance of the liver, which penetrates to its parietal surface. The *heart* is received into the upper end of the groove which separates the two lobes of the liver, the pericardium being fixed to the ligamentum suspensorium. The conus arteriosus is well developed, and emits the art. pulmonalis, whilst a truncus arteriosus arises from the ventricle.

The *trachea* has the cartilaginous rings not closed on the dorsal side, and is divided into the two bronchi at some distance from their entrance into the lungs: they penetrate so far into the substance of the lungs, that they nearly reach their posterior extremity; and the length of each bronchus is equal to that of the undivided trachea: each bronchus opens by several lateral foramina, but emits only one short branch, which, again, is provided with incomplete cartilaginous rings. The *lungs* of both sides are nearly equally developed, and of moderate capacity; their interior is amply provided with cells and meshes, even in their posterior extremity.

The *kidneys* are of an elongate, pear-shaped form, entirely separated from each other, and of equal size. Each is formed by eight larger and some smaller lobes, which are united only at the base, the former making several convolutions. The ureters end in two small papillæ at the extremity of a large separate sac on the dorsal side of the rectum. As the urine is not received in this sac, but in the hindmost portion of the intestinal tract, we cannot consider it as a urinary bladder, although Cuvier describes such an organ in *Iguana* and *Tupinambis*. The secretion is, as usual, of a firm, chalk-like appearance.

The *ovaria* are equally developed on both sides; both exhibit the same degree of disease in the present specimen. The oviducts are of moderate width, and convoluted like the intestines; their ostium abdominale is wide, situated above the ovarium, and not fringed. The orificium uterinum is exceedingly narrow, on the tip of a large papilla which projects into the upper part of the sac mentioned. This sac is situated on the dorsal side of the rectum, and appears to belong exclusively to the generative organs.

Fatty masses are found in a great many reptiles, as, for instance, the *corpora adiposa* in the abdominal cavity of the Batrachians, or on each side of the abdomen of *Iguana* *. Owen considers them as reservoirs of nutritious matter which is resorbed during the time of the torpid state, into which at least the former of those animals fall. In none, however, are those *corpora adiposa* so developed as in *Regenia ocellata*. They completely fill each side of the iliac region, and evidently give the broad, bulky appearance to the animal; they are contained in a separate sac of the peritoneum, and provided with numerous blood-vessels. Their greatest length is 7 inches, their greatest width 6 in., and their thickness in the middle $1\frac{1}{2}$ in.; in weight they equal the fifth part of the weight of the entire animal.

* Owen, Catal. Coll. of Surg.

Each of them is formed by larger and smaller separate lobes, which give it the appearance of the kidney of a Dolphin; only, the single lobes are larger, less numerous, and more irregular in size. When cut through, they cover the knife with a milky fat; and their consistence is altogether that of a fatty-degenerated liver. Although the animal appeared to be very muscular and very well fed, no fat was deposited at any other place.

The *cause of death* was a disease which had nearly entirely destroyed both the ovaria, and certainly greatly altered their natural form. The one which I have examined contained a great many irregular and lacerated cavities filled with extravasated blood. No trace of the folliculi could be distinguished. A rounded mass, of the size of a small walnut, enclosed in a tough membrane, surrounded by coagulated blood, and composed of a cheesy substance, is evidently an egg which had been developed during one of the previous breeding-seasons, but had been retained in the ovarium. A similar body can be felt in the other ovarium. The membranes coating the ovarium are covered with cysts of the average size of a lentil, some containing a gelatinous fluid, others matter. The neighbouring parts of the peritoneum were much inflamed; and the kidneys contained an unusual quantity of fluid blood. The rectum was filled with a large mass of hard, chalk-like urine; and it became evident from the excoriated state of the mucosa, that no discharge had taken place for a long time. All the other organs were quite healthy; and the animal had fed only two days previously to its death.

The preparation is preserved in the Collection of the British Museum.

2. NOTE ON THE REPRODUCTION OF THE RED RIVER-HOG (*POTAMOCHÆRUS PENICILLATUS*) IN THE SOCIETY'S MENAGERIE. BY PHILIP LUTLEY SCLATER, M.A., PH.D., SECRETARY TO THE SOCIETY.

(Plate XII.)

The accompanying drawing (Pl. XII.), executed by Mr. Wolf some time since, represents the immature form of the Red River-hog of Western Africa, which has of late years bred several times in the Society's Menagerie, although but two individuals of the produce have, unfortunately, lived to attain maturity. As our only male of this species is now dead, and we have but a single female left in the collection, it appears desirable that a short statement of the facts connected with the reproduction of this rare animal in captivity should be placed on record before they are entirely forgotten.

The first specimen of the Red River-hog obtained by the Society was purchased in Liverpool in September 1852, and was the example described by Dr. Gray in the *Annals of Natural History* as *Choiropotamus pictus**, and subsequently in the Society's 'Proceedings' under the rectified name *Potamocharus penicillatus*†. At the latter

* Ann. N. H. ser. 2. vol. x. p. 280.

† P. Z. S. 1852, p. 131.



J. Wolf. del et lith.

POTAMOCHERUS PENICILLATUS *fæm et juv.*

M. & N. Hanhart imp.

reference a good figure is also given of the adult animal. About two years afterwards, a female of the same species was received from Paris, having been obtained, through the good offices of the authorities of the Jardin des Plantes, from the French settlements in Western Africa. Upon being placed in company with the male, she produced a litter of three or four young ones in the summer of 1856, and again in August 1857, but on both occasions destroyed them all within a short period after their birth. In the following season a litter of three young ones, produced on June 4th, 1858, was attended with more fortunate results. One only of the young pigs perished, shortly after its birth; the other two, both females, are still living—one in the Society's Gardens, and the other in the collection of the Zoological Society of Amsterdam, to whom it was parted with in exchange for other animals.

In 1859 the female Red River-hog again produced a litter of four young ones (on October 24th); but our efforts to save them were quite unavailing, and they disappeared one by one, having been destroyed by their mother within a few weeks after their birth.

Mr. Wolf's figures give an accurate representation of the striped condition of these young *Potamochoerus* as they have appeared in our Menagerie. Several of them in this state of coloration are now in the collection of the British Museum, together with the original male of the species, which died in February 1860, and the old female, which died in the previous autumn.

The same striped condition of the immature animal is found in the young of the Wild Hog of Europe (*Sus scrofa*) and that of India (*Sus indicus*); but I am not aware of any corresponding stage in the young of the domesticated animal of this country; nor is there any sign of it in the young of the very curious Japanese variety of the domestic Pig, which has lately reproduced in our Gardens.

I may observe also that in the Peccaries (*Dicotyles*) (the *Suidæ* of the New World) the young resemble the adult in coloration, except in being lighter; and in the Wart-hog (*Phacochoerus*), judging from the young individual in the British Museum, the case is the same.

The nearest counterpart I know, of the immature dress of *Sus*, is to be found among the Tapirs, in two of which the young are somewhat similarly striped. But I am of course well aware that the Tapirs and Pigs are now referred to two distinct orders of *Mammalia*.

3. NOTES ON A COLLECTION OF MAMMALS MADE BY THE LATE MR. OSBURN IN JAMAICA. BY ROBERT F. TOMES, CORR. MEM. Z.S.

(Plate XIII.)

The collection, the species of which I am about to enumerate, is interesting from containing specimens of a Bat which has very recently been made the type of a new genus by Dr. Gundlach, and because it also contains specimens of the *Monophyllus redmanii* of

Leach, a genus and species which have not until now, to the best of my knowledge, been brought under notice, excepting by the unsatisfactory description of the wretched type specimen of Dr. Leach. Of this I shall have more to say in a subsequent communication.

1. *MUS RATTUS*.

2. *MUS TECTORUM*.

In so far as external appearances are concerned, these specimens differ in no way from European ones. They must be regarded as settlers in the island.

3. *CAPROMYS BRACHYURUS*, Hill, in Gosse's Naturalist's Sojourn in Jamaica, p. 471.

A single specimen, which has not perhaps been sufficiently examined to determine with absolute certainty its synonymy.

4. *ARCTIBEUS PERSPICILLATUS*, Linn. sp.

Phyllostoma perspicillatum, Geoff.

P. superciliatum et *P. obscurum*, Pr. Max.

Arctibeus jamaicensis, Leach & Horsfield.

Arctibeus carpolegus, Gosse, Nat. Soj. in Jam. p. 271.

Phyllostoma planirostre, Spix?

After the examination of many specimens from the West Indian Islands and the continent of America, I am fully persuaded that they are all referable to one species, and that that species is the *Vespertilio perspicillatus* of Linnæus. There is, I admit, considerable difference in the size of the different individuals, the island specimens being smaller and darker-coloured than those from the mainland; but as this is the case with the other Bats which inhabit alike the West Indian Islands and the continent of America, it cannot be advanced as evidence of these two being distinct species, but rather the reverse.

5. *ARCTIBEUS BRACHYOTUS*, Pr. Max. sp.

Phyllostoma brachyotum, Pr. Max.

Arctibeus jamaicensis, Gosse, Nat. Soj. in Jam. p. 271.

A. achradophilus, Gosse, Nat. Soj. in Jam. p. 271.

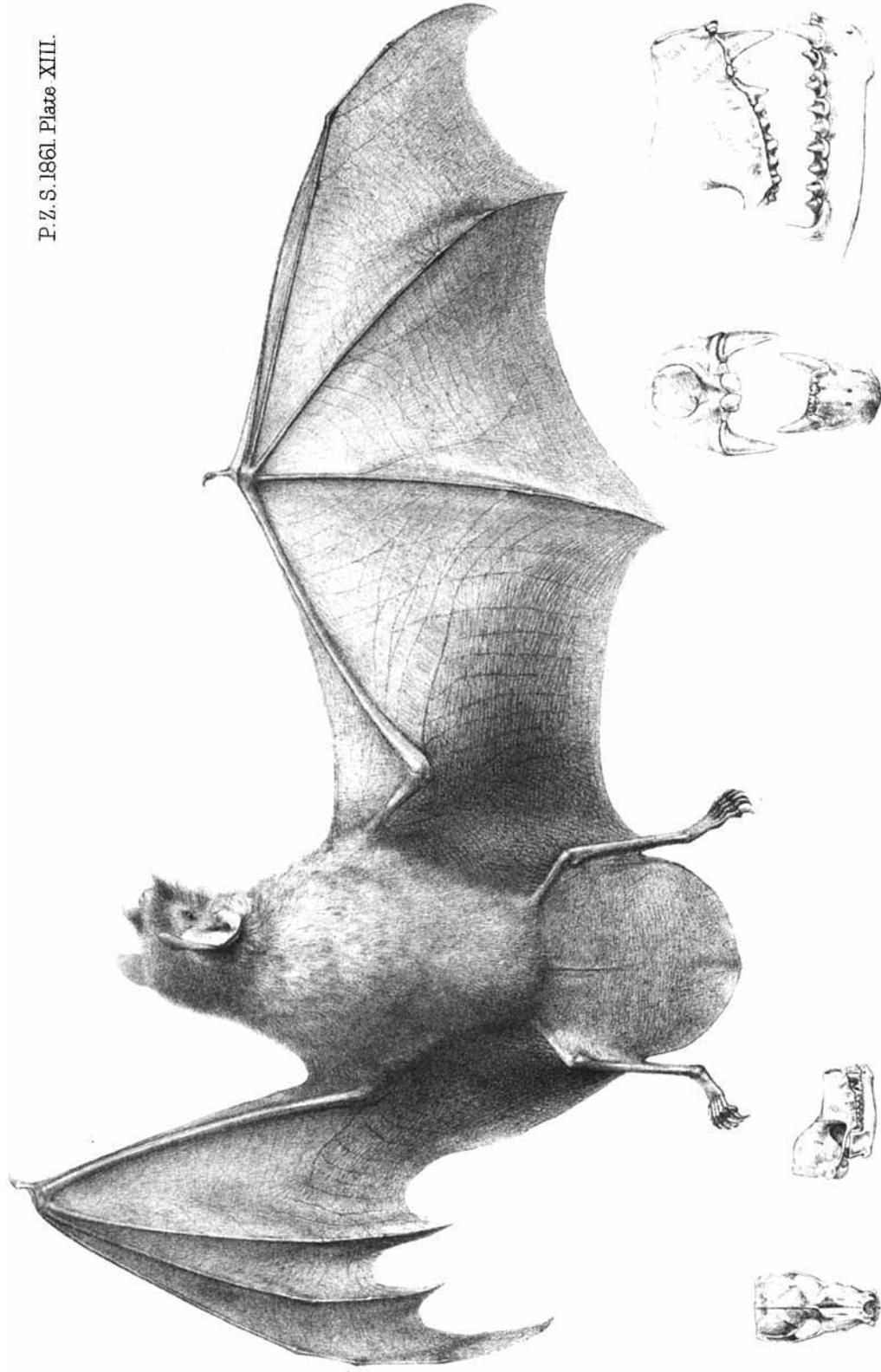
A. sulphureus, Gosse, Nat. Soj. in Jam. p. 271.

I have compared the specimens in the present collection with the types of *A. jamaicensis*, *A. achradophilus*, and *A. sulphureus* of Mr. Gosse in the British Museum, and again with the specimen of *Arctibeus brachyotus* formerly in the Museum of this Society, so named by Mr. Waterhouse; and find them to be identical.

6. *MONOPHYLLUS REDMANII*, Leach.

Glossophaga caudifer, Geoff.?

Five specimens, obtained by Mr. Osborn in Oxford Cave, Manchester, in February 1859. I have compared some of these with the type in the British Museum. It is probable that this is the *Glossophaga caudifer* of M. Geoffroy St. Hilaire.



CHILONYCTERIS OSBURNI.

G.H. Ford.

W. West. imp.

7. *MACROTIS WATERHOUSII*, Gray.

The present species would appear to be common in Jamaica, if we may judge from the number contained in the present collection as compared with the other species. Some of these specimens, from the unossified condition of the joints of their fingers, are obviously immature, and enable me to state that the older examples are of a more decidedly rufous tint than the younger ones.

8. *PHYLLONYCTERIS POEYI*, Gundlach, Monatsb. der Königl. Akad. der Wiss. zu Berlin, Dec. 1860, p. 817.

This singular genus, lately characterized by Dr. Gundlach, has much the general appearance of *Brachyphylla*, but is probably more nearly allied to *Monophyllus*, although generically quite distinct. Mr. Osburn's four specimens were collected at Harmony Hall, Trelawny, in June 1859.

9. *NATALUS STRAMINEUS*, Gray.

Nyctiellus lepidus, Gerv.

Spectrellum macrourum, Gerv. ?

These specimens from Jamaica, obtained in Oxford Cave, Manchester, in February 1859, differ from those which I have previously described from the continent of America, in being smaller and rather darker in colour.

The *Nyctiellus lepidus* of Gervais is clearly the present species; and I have but little doubt that his *Spectrellum macrourum* is identical with the larger American specimens.

10. *MORMOOPS BLAINVILLII*, Leach.

Examples are labelled "Freeman's Hall" and "Sportsman's Cave."

Specimens of this species which I have seen from South America are larger than those from Jamaica, and usually deeper in colour. Some of those in the present collection have the under parts of a pale rusty-red colour.

11. *CHILONYCTERIS QUADRIDENS*, Gundl.

Lobostoma quadridens, Gundl. Wieg. Archiv, 1840, p. 358.

*Chilonycteris grisea**, Gosse, Nat. Soj. in Jamaica, p. 326, 1851.

Five ex. from Oxford Cave.

Mr. Gosse describes and figures his *C. grisea* as having "four points" in the prominent upper margin of the nose-disk; and it was this peculiarity which induced Dr. Gundlach to bestow the above specific name of *quadridens* on a specimen from Cuba. The dimensions also of the species described by these two gentlemen being so nearly similar, leaves no reasonable doubt of their identity.

* *Chilonycteris macleayi* and *C. fuliginosa* are closely allied to this species, if not identical with it.

12. *CHILONYCTERIS OSBURNI*, n. sp. (Pl. XIII.)

The present species, of which six examples are in the collection obtained at Sportsman's Cave in Dec. 1858, appears to bear some resemblance to the *Chilonycteris gymnonota* of Natterer, at least so far as I can judge from the figure and description of that species in the fifth volume of Wagner's Supplement to Schreber's work on Mammalia. It is, however, manifestly larger than that species, and differs greatly in having the back well clothed with thick fur, and in having a differently-shaped tragus. Dr. Natterer's description of *C. gymnonota* in Wiegmann's Archiv for 1843 is as follows:—" *Ch. fusca, dorso nudo. Antibrachium 1" 8½'"*." This description, although very brief, is quite sufficient to distinguish it from the other known species, and therefore from the species which I am about to describe. The *C. rubiginosa* of Natterer agrees with *C. osburni* in having the back thickly hairy; but it is larger, and differs besides in several particulars, as I shall endeavour to show.

The top of the head is considerably more elevated than that of *C. rubiginosa*, about as much so as in *C. quadridens*. The muzzle differs greatly from that of both these species. The end of the snout is remarkably broad and flattened, the end or disk having a horse-shoe shape, the middle of which may be said to represent the end of the nose, and contains the nostrils; and the two descending ends form the upper lips. The nostrils are small, round, and have a slightly raised margin. In the centre of the upper part of the rim of this nose-disk is a notch, and from it, descending vertically between the nostrils, is a slight raised ridge; on the outside of the two nostrils there are two shallow notches in the rim of the nose-disk. On the top of the nose, and about a line and a half behind the nose-disk, is a prominence, which in this species is of an obtusely pyramidal form, rising more abruptly in front than behind, and which appears when seen in front like a second but narrower snout. In *C. quadridens* this projection is scarcely visible, and in *C. rubiginosa* it is simply a kind of nodular swelling.

The lower lip is broadly reflected, its lower margin being free and pendent; the centre of its upper edge consists of a narrow horizontal projection, which is enclosed below by a crescentic groove: and beneath this all the naked part forming the reflex part of the lip is covered with regular warty excrescences of a rounded form, which are much larger and better defined in the middle part than on either side, where they become small and indistinct. Below this part of the lower lip is a transverse fold or leaf, which is much more fully developed in this species than in *C. rubiginosa* (in which species its position is indicated by a mere line or seam), but much less so than in *C. quadridens*, in which it attains a leaf-like expansion of equal prominence with the lip itself.

The ears are shaped much like those of *C. rubiginosa*; but they are relatively broader at their base than in that species, and their outer margin is less deeply emarginate. Their upper or narrower part is relatively broader than it is in the smaller species *C. quadridens*; but the extreme tip is not so much rounded as in the latter species,

being, on the contrary, acute. The tragus is placed deep in the cavity of the ear, and is difficult to see; it is rather short, and of a peculiar form. Of medium breadth at the base, it expands on each side for a distance of a little more than half its length, and from this its widest part it decreases rapidly to a blunt point, from which spring a few long, fine, frizzled hairs. Near the base of the outer margin is a blunt angular projection; and in its opposite edge are two nicks, the one below its point of greatest breadth, and the other above it, leaving a kind of rounded lobe between them. Of these nicks (they scarcely deserve the name of notches), the lower one is the deeper. But the most remarkable feature in the tragus is the manner in which it strides over or embraces the *meatus auditorius*. Usually this passage passes under the tragus, from behind, near to its outer edge; but in this species* the outer thin edge is split longitudinally at its base into two layers, one of which is in front of the *meatus*, and the other behind it, the latter being the smaller of the two. Thus the outer edge of the tragus may be said to stand astride of the *meatus*.

The thumb is of moderate length, and its basal phalange is rather shorter than the penultimate one. The antibrachial membrane is rather ample near the body, but disappears before reaching the thumb. The feet are rather long, the toes being half their length; and the claws are strong and much curved. The wing-membranes extend to the distal extremity of the tibia, over which they pass, and are attached to the root of the *calcaneum*, just as in *Natalus* and *Mormoops*.

The tail extends barely to the middle of the interfemoral membrane; and scarcely one-half of it is free above the membrane.

The ears are very hairy inside near their base, *i. e.* in front of the tragus, but not elsewhere, either inside or out. The fur of the forehead extends uninterruptedly forward to the posterior facial prominence, which it leaves free; but on the sides of the face it comes a little more forward, and forms two very conspicuous tufts of hair, which are thick, long, and straight, and have a forward direction, their points being quite as far forward as the end of the nose. Vertically these tufts of hair extend from the edge of the upper lip almost on to the top of the nose. The membranes are everywhere destitute of hair; they are finely reticulated and dotted near the sides of the body, the base of the interfemoral membrane, and the interbrachial membrane; under the distal extremity of the humerus they are broadly reticulated; the remaining parts of the membrane, *i. e.* those nearest the extremities, are nearly destitute of markings.

The fur of all the upper parts is short and shining, though not very fine; its general hue is dark grey-brown; it is indistinctly tricoloured—being dusky at the roots, then of a shining grey, and its tips dark greyish-brown; beneath, it is of two colours—dusky at the roots, its terminal half whitish-brown, without gloss, and palest along the middle of the abdomen. The cutaneous system is dark brown.

* I have not examined the tragus of any other species of *Chilonycteris*.

All the specimens maintain a remarkable uniformity in colour and general appearance.

Length of the head and body, about	2	0
—— of the head	0	10
—— of the ears	0	7
—— of the tragus	0	2 $\frac{3}{4}$
Breadth of the ears above their outer notch	0	4
Greatest breadth of the tragus	0	1 $\frac{3}{4}$
Length of fore-arm	2	2
—— of first finger	1	9
—— of second finger	3	5
—— of third finger	2	6
—— of fourth finger	2	5 $\frac{1}{2}$
—— of thumb and claws	0	3 $\frac{1}{2}$
—— of tibia	0	8 $\frac{1}{2}$
—— of foot and claws	0	5 $\frac{1}{2}$
—— of <i>os calcis</i>	0	10
—— of tail	0	9
—— of free end of the tail	0	3 $\frac{1}{2}$
—— of the interfemoral membrane	1	3
Expanse of wings, following the curve of the bones	14	0

The above dimensions have been taken from one of the largest specimens; the fore-arm of the smallest is $1\frac{1}{2}$ ''' shorter; and as the other dimensions conform pretty accurately to this reduced standard, it will be unnecessary to repeat them.

13. NOCTILIO AMERICANUS.

One ex. from Long Hill, St. Elizabeth co.

14. MOLOSSUS FUMARIUS, Spix.

Molossus obscurus, Geoff.

M. fuliginosus, Gray (not Cooper).

I have seen in the museums of Paris and Leyden the specimens of *M. obscurus* of MM. Geoffroy and Temminck, and find them to be identical with the *M. fuliginosus* of the British Museum, and have no doubt that both are referable to the *M. fumarius* of Spix. All the West Indian specimens which I have seen are rather smaller than the South American ones, and for the most part brighter in colour, but at the same time darker.

15. NYCTINOMUS NASUTUS, Spix, sp.

Nyctinomus brasiliensis, Geoff.

N. murinus, Gray.

Molossus fuliginosus, Cooper.

Rhinopoma carolinensis, Le Conte (not Geoffroy).

As in so many other species, the island specimens of this one are somewhat smaller than those from the mainland. Its geographical



J. Verreaux.

M & N. Hanhart, Imp^r

1 VIREO MODESTUS
2 LALATES OSBURNI

range appears to be very extensive. I have received specimens from many localities in South America, and have compared them with others from Central America, and with the types of *N. brasiliensis* in the Paris Museum, and, again, with specimens of *Molossus fuliginosus* from Charleston, South Carolina, whence they had been sent by Dr. Bachman; and I find them to be all of one species.

This has been supposed by Major Le Conte and others to be the *Rhinopoma carolinensis* of M. Geoffroy; but, having examined the type of this species in the Paris Museum, I am enabled to state that such is not the case. The *Rhinopoma carolinensis* is a small *Molossus* from West Africa and Bourbon (*M. acetabulosus* = *M. natalensis*, Smith); and the *Vespertilio borbonicus*, in the same collection, is a yellowish specimen of the *Vespertilio (Lasiurus) noveboracensis* of the United States! An exchange of labels would render these species intelligible.

4. LIST OF A COLLECTION OF BIRDS MADE BY THE LATE MR. W. OSBURN IN JAMAICA, WITH NOTES. BY P. L. SCLATER, M.A., PH.D., SECRETARY TO THE SOCIETY.

(Plate XIV.)

On the departure of Mr. Osburn, the brother of the late Mr. W. Osburn, to America last year, I was entrusted with the care of the collections of Natural History formed by the latter gentleman in Jamaica, and leave was given me to examine their contents. Being now engaged in preparing a Report on the present state of our knowledge of West Indian Vertebrates for the British Association for the Advancement of Science, I have not thought it right in the interests of science, and in vindication of the discoveries made by the late Mr. W. Osburn, to defer the examination of them any longer.

I have accordingly prepared the following list of the species of birds obtained by Mr. Osburn during his sojourn in Jamaica; and Mr. R. F. Tomes, at my request, has kindly undertaken the task of determining the Mammals, and has given the results of his investigations in the paper just read to the meeting.

Mr. W. Osburn, whose untimely death we must all deplore as that of an energetic scientific explorer and most intelligent writer on Natural History, commenced his residence in Jamaica in the beginning of 1858, and stayed there, I believe, until the period of his decease in the spring of 1860. A series of very interesting letters relating to the natural objects observed in that island will be found in 'The Zoologist' for 1859 and 1860, having been communicated to that periodical by Mr. P. H. Gosse, to whom they were addressed.

The most interesting and the only species which appears to be entirely new in Mr. Osburn's collection is a little bird belonging to the American group of Greenlets (*Vireonidæ*), clearly intermediate in characters between *Vireo* and *Vireolanus*, possessing the bill of the latter and the plumage and general structure of the former. This

form, which Mr. Osburn has designated in his MS. "Olive Chat-
terer," I propose to dedicate to its discoverer by the name *Laletes*
osburni.

Besides this, Mr. Osburn's series embraces examples of six other
species not noticed by Mr. Gosse in his admirable work on the birds
of the island; and Mr. Osburn may therefore be fairly considered to
have added the following eight species to the Jamaican avi-fauna:—

1. *Henicocichla ludoviciana*.
2. *Dendroeca palmarum*.
3. *Laletes osburni*.
4. *Nesopsar nigerrimus*.
5. *Siphonorhis americanus*.
6. *Tringa bonapartii*.
7. *Herodias egretta*.
8. *Nycticorax violaceus*.

1. *TURDUS JAMAICENSIS*, Gm.: Gosse, B. Jam. p. 142, et Ill.
pl. 24.

2. *TURDUS AURANTIUS*, Gm.—*Merula leucogenys*, Gosse, B. Jam.
p. 136, et Ill. no. 23.

3. *HENICOCICHLA LUDOVICIANA* (Aud.).—*Seiurus ludovicianus*,
Baird.

Two ex., from Freeman's Hall, Trelawny (5th Sept. 1859).

This species is not mentioned by Gosse; but I have examples from
Jamaica in my own collection from a different source. Mr. Osburn
has marked it "*Seiurus noveboracensis*."

4. *HENICOCICHLA NOVEBORACENSIS*, Gm.: Gosse, p. 151.

One ex. from Savannah la Mar, Westmoreland, 28th Aug. 1858.
Seiurus gossii, Bp. Consp. p. 306, is founded upon the Jamaican
bird, but it does not appear to me different from the continental *H.*
noveboracensis.

5. *HENICOCICHLA AURICAPILLA* (Lin.).—*Seiurus auricapillus*,
Gosse, p. 152.

One ex., from Long Hall (March 11th).

6. *PARULA AMERICANA* (Linn.): Gosse, p. 154.

Two ex., from Mahogany Hall.

7. *GEOTHLYPIS TRICHAS* (Linn.): Gosse, p. 148.

Three ex., from different localities.

8. *MNIOTILTA VARIA* (Linn.): Gosse, p. 134.

One ex., Freeman's Hall (January).

9. *DENDROECA CANADENSIS* (Linn.): Gosse, p. 160.

Several examples in full male plumage.

10. *DENDRÆCA PANNOSA* (Gosse).—*Sylvicola pannosa*, Gosse, p. 162.

Mr. Osburn's collection contains one example of this bird, marked "female." I have little doubt that it is, as has been suggested by Prof. Baird (B. Amer. p. 271) the female of *D. canadensis*, but I have not been able to compare it with females of *D. canadensis* from the continent.

11. *DENDRÆCA PHARETRA* (Gosse).—*Sylvicola pharetra*, Gosse, p. 163; Osburn in Zoologist, p. 6660.

Eight examples of this bird are in Mr. Osburn's collection, principally from Freeman's Hall, collected in January, April, and August 1859. I think there can be no doubt about its being a good typical *Dendræca*; and I should place it next to *D. striata*, which it approaches to in colouring more nearly than to any other known species.

The sexes, as determined by Mr. Osburn, are nearly similar; only the female is less striated and more white on the lower surface, and has the vent and upper tail-coverts pale brown. In the male these parts are more of an ashy brown.

12. *DENDRÆCA PETECHIA* (Linn.): Cassin, Proc. Acad. Philad. 1859, p. 376.—*Sylvicola æstiva*, Gosse, p. 157.

Three examples of this bird (which is rightly distinguished by Cassin from the continental *D. æstiva*, and appears to be the true *petechia*) are marked by Mr. Osburn "*Sylvicola eoa*, Gosse." I do not know the latter bird; but if Mr. Gosse's description (p. 157) and figure (Ill. no. 34) are at all accurate, it must be quite a different species. Mr. Osburn's three specimens of *D. petechia* were obtained in the months of April, May, and August. The crown of that killed in May is deep orange-red, of which there are less traces in that killed in April. The specimen obtained in August is in full plumage, but in bad feathering, and apparently in moult.

13. *DENDRÆCA TIGRINA* (Gm.): Baird, B. Amer. p. 286. — *Certhiola maritima*, Gosse, B. Jam. p. 87, et Ill. pl. 17.

Two examples—a male from Long Hill, St. Elizabeth, 12th March, 1832, coming into full plumage, and a female or young bird from Portland, Vere, 12th April, marked *Sylvicola æstiva*.

14. *DENDRÆCA PALMARUM* (Vieill.): Baird, B. Amer. p. 288.

Three examples of this rather scarce Wood-warbler (which is not mentioned by Mr. Gosse) are in Mr. Osburn's series, marked *S. æstiva*. A male, killed April 6th, 1859, shows the red head coming on; and in a second of the same sex, killed in November, the red tinge may be distinguished. The third bird is a female, with the date not given.

15. *DENDRÆCA DISCOLOR* (Vieill.): Gosse, p. 159.

Three ex., obtained in January and August.

16. *SETOPHAGA RUTICILLA* (Linn.): Gosse, p. 164.

Several ex. of both sexes.

17. *PETROCHELIDON FULVA* (Vieill.).—*Hirundo pæciloma*, Gosse, B. Jam. p. 64.

One ex. It is now well known that this insular bird (and not the N. American *H. lunifrons* of Say) is the true *Hirundo fulva* of Vieillot.

18. *PETROCHELIDON EUCHRYSEA* (Gosse): Gosse, p. 68.

Three ex., from Freeman's Hall, Trelawny.

19. *VIREO MODESTUS*, Sclater, P. Z. S. 1860, p. 462. — *Vireo noveboracensis*, Gosse, p. 192. (Pl. XIV. fig. 1.)

Three examples of this bird, from Freeman's Hall and Mahogany Hall, Trelawny, serve to confirm the validity of the species which I have recently separated from *Vireo noveboracensis* of the continent. The sexes appear to be coloured alike. Mr. Gosse states that it is found all the year in Jamaica, "though in diminished numbers in the summer." Mr. Osburn's examples were procured in February, October, and November.

20. *VIREOSYLVA ALTILOQUA* (Vieill.).—*Muscicapa altiloqua*, Vieill. Ois. Am. Sept. i. p. 67; *Vireosylva olivacea*, Gosse, p. 194.

All the *Vireosylvæ* which I have met with from Jamaica and S. Domingo belong to the present species, which I have no doubt is the bird taken by Gosse for *Vireosylva olivacea*, as has already been suggested by Mr. Newton (*Ibis*, 1859, p. 145). Mr. Osburn's specimens were obtained in the months of June, July, and August.

21. *LALETES OSBURNI*, sp. et g. nov. (Pl. XIV. fig. 2.)

Laletes genus novum Vireonidarum, inter Vireonem et Vireolanium medium, rostro huic, illi vero coloribus magis affine: rostrum altius, fortius, compressius quam in Vireone et apice magis uncinato, sed brevius quam in Vireolano: alæ modicæ, dimidium caudæ attingentes: remige externo spurio præsentē; quinto longissimo, sed quartum et sextum, inter se æquales, vix superante, secundo breviorē quam secundarii: pedes et cauda fere sicut in Vireone, sed pedes majores et robustiores, et tarsi paulo longiores.

Typ. et sp. unica *Laletes osburni*.

L. olivaceus, pileo vix olivacescente, subtus dilutior, abdomine præcipue in medio flavicante: rostro plumbeo, pedibus corylinis.

Long. tota 5·7, alæ 2·9, caudæ 2·2, rostri a rictu 0·65, tarsi 0·85 unc. et dec.

Hab. In ins. Jamaica.

Mr. Osburn's collection contains four examples of this bird, labelled "Olive Chatterer," and obtained at Freeman's Hall, Trelawny, in the months of January and April 1859. Comparing it with *Vireo*

flavifrons, which it exceeds by rather more than half an inch in total length, we find the beak more compressed and Shrike-like, and nearly similar to that of *Vireolanus pulchellus*, only shorter. The wings are much shorter in proportion than in *Vireo flavifrons*, and the first spurious primary is well developed, measuring about three-quarters of an inch from its insertion. The tarsi and feet in *Laetes* are also rather more robust, and the tail slightly longer, than in this *Vireo*.

The following notice of this species is extracted from one of Mr. Osburn's letters in the *Zoologist* (1859, p. 6662).

"A second bird rather abundant in this district, and not included in your list, is a sober-suited olive-coloured little fellow, that keeps pretty much to the higher branches of lofty trees, though I have not unfrequently met with it on less elevated positions. From its strong, compressed, deeply-toothed bill, I was at first inclined to suppose it might belong to Mr. Swainson's extensive genus *Thamnophilus*; but a better acquaintance with its habits and structure has convinced me that it should probably be classed among his *Ampelidæ*, and somewhere near *Pteruthius*, perhaps, though I am unable to refer it satisfactorily to any of his genera. Not to fill up my letter with a detailed description, which I propose forwarding with the specimens, I may add that the head is a grey dubious olive, which becomes greener on the back. The quills and tail smoky-black, with olive edges, and the under parts dingy yellow. But its chief characteristics are the disproportionate size and thickness of the head, which seems only owing to the arrangement of the feathers, for it would not be suspected from the dried skin. I hope to forward an outline taken from a specimen when quite recent. The grey-blue of the beak is singularly in contrast with the prevailing tints of the plumage. The bird is tame and fearless, and, if perching low, may be easily approached, and is another of the lovers of profound solitude in the forest. I shot two in the earlier part of the year, and in the spring two more. They were then more sociable, and not uncommon. They hunt insects, with considerable bustle. It will give an idea of their movements, if I add that on shooting them at great heights I mistook, before firing, one of them for a *Vireosylvia*, and the other for *Sylvicola pharetra*; but I never saw it distinctly catch an insect on the wing. The stomachs contained several large seeds, a plant-bug, elytra of beetles, &c."

22. *PTILOGONYS ARMILLATA* (Vicill.): Gosse, p. 198.

23. *CERTHIOLA FLAVEOLA* (Linn.): Gosse, p. 84.

Several examples.

24. *GLOSSIPTILA RUFICOLLIS*, Sclater, P. Z. S. 1856, p. 269.—*Tanagrella ruficollis*, Gosse, p. 236.

Several ex. of both sexes.

25. *EUPHONIA JAMAICA* (Linn.): Gosse, p. 238.

Several examples.

26. *SPINDALIS NIGRICEPHALA* (Jameson): Sclater, P.Z.S. 1856, p. 230.—*Tanagra zena*, Gosse, p. 231.

A pair of this Tanager.

27. *LOXIGILLA VIOLACEA* (Linn.). — *Pyrhula violacea*, Gosse, p. 254.

Two ex. of the male sex, and one female "in male attire," as marked by Mr. Osburn.

28. *LOXIGILLA ANOXANTHA* (Gosse).—*Spermophila anoxantha*, Gosse, B. Jam. p. 247.

Several examples of this bird, which I have often seen in Jamaica collections. It seems to belong to the same little group as the preceding species, having the same sort of bill, though, of course, smaller in size, and perhaps not quite so much incurved. The *anus*, properly so-called, is "brick-red," as correctly described by Gosse, whereas his specific term would seem to imply that it was yellow.

29. *COTURNICULUS TIXICRUS*, Gosse, B. Jam. p. 242.

Two examples—the first I have seen of this bird, which is certainly a good species, and different from any of its continental representatives. One example was obtained at Freeman's Hall, in July 1859, and the other in the Santa Cruz mountains, in the previous March.

30. *SYCALIS BRASILIENSIS* (Gm.). — *Crithagra brasiliensis*, Gosse, B. Jam. p. 245.

One ex., a male, in full plumage.

31. *ICTERUS LEUCOPTERYX* (Wagl.): Gosse, p. 226.—*Psarocolius leucopteryx*, Wagl. Syst. Av. sp. 16; *I. personatus*, Temminck.

One example.

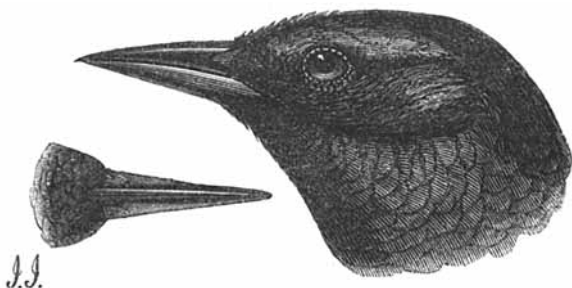
32. *DOLICHONYX ORYZIVORUS* (Linn.): Gosse, p. 229.

One ex., a female, killed in October.

33. *NESOPSAR NIGERRIMUS*, Sclater, Ibis, 1859, p. 456.—*Icterus nigerrimus*, Black Banana Bird, Osburn in Zoologist, pp. 6661 et 6714, et MS.

I shortly described this bird, and gave it a generic name (when noticing Mr. Osburn's letter about it in 'The Ibis'), from examples in my own collection. Mr. Osburn's series contains six specimens of this bird, agreeing with my own. The form must, I think, be placed among the *Quiscalinæ*, not far from *Scolecophagus*, and next to *Lampropsar* of Cabanis. If I am right in my identification of *Lampropsar guianensis*, the two forms are perhaps barely separable generically. The beak (see woodcut) is nearly alike in both; the wings are proportionately rather shorter in *Lampropsar*, but their

general structure is the same; the tail is shorter in *Nesopsar*, and the tarsi are likewise considerably shorter.



Mr. Osburn's six examples of this bird were obtained at Freeman's Hall, as is related in 'The Zoologist' (p. 6661), where the following notice is given of this species:—

"Towards the end of last year, whilst riding through the lower mountains, a perfectly black bird alighted on a wild pine growing at some height, in a vertical position; and as I watched it I observed it climb about the stiff leaves with great agility, and eagerly search their sheathing bases. Your surmise as to the 'Black Banana Bird' instantly occurred to me. I did not then procure it; but the negroes assured me they were abundant higher up, and the investigation was one of the chief objects I proposed to myself on coming here. I did not find them very common, and procured only four specimens during the first six weeks of the year. They are to be met with especially in those deep damp hollows which the forest growth seems striving to conceal, and where orchideous parasites and wild pines luxuriate in abundance. It may there be seen climbing among them, as mentioned above, or flying from tree to tree in short flights; or, if not visible, its very peculiar call is audible far over head. I would imitate it by '*kep-chur-r-r-r*,'—the first a loud, clear note, followed by a rattle, reproduced with sufficient exactness by a long, rough '*r*.' The whole bird is coloured black, and that of the plumage has the purplish gloss of our *Quiscalus*. The hind toe seems rather more developed than in *Icterus leucopteryx*; and it has, I think, a corresponding increase of climbing power, oftener assuming the vertical attitude. One I shot hung head downwards for some time, exactly as the common Banana Bird will do. Another very marked distinction is, that the culmen, or upper ridge of the bill, is flattened and broad, dividing the frontal feathers, like a plate, but does not expand. The following are the dimensions of two specimens; the second was a female, and the first I believe a male, though the part was much injured:—

Length $8\frac{1}{4}$ ".	Exp. 13.	Flex. $4\frac{1}{2}$.	Tail $2\frac{7}{8}$.
„ $7\frac{1}{2}$ ".	„ 12.	„ 4.	„ $2\frac{1}{8}$.
Rictus 1".	Tarsus 1.	Mid. toe $\frac{7}{8}$.	
„ 1".	„ 1.	„ $\frac{7}{8}$.	

Hallux $\frac{3}{8}$, not, therefore, so long as the tarsus. Intestine 8. The stomachs of all four contained fragments of insects, Coleoptera chiefly; I found no traces of seeds. On the 11th of February the ova of the female were still minute; and in skinning the birds I noticed a rank odour common to many *Corvidæ*. A female was brought to me still alive, and apparently uninjured, except a fracture of the leg. It showed not the slightest pugnacity when handled, and lived several hours. It had not any notion of applying the uninjured foot to a flat surface, but kept it grasped. I put it on a perch. Whether from pain or weakness I do not know; but it immediately slipped round and hung suspended head downwards by its sound foot for some time, and then fell. I do not regard this as a satisfactory proof that the bird habitually rests in this position; but it is not impossible, because, according to the ordinary theory of perching, that in which the weight of the body is brought to bear is, with most birds, the easiest position; whereas this bird made no effort to keep upright, but immediately slid round, as if that were the most available posture for holding on. Of its nidification I have as yet learnt nothing. Should this species prove new to science as well as an addition to our Jamaica list, I would propose '*nigerrimus*' as the specific name, if it is not already appropriated."

34. *ELAINEA COTTA*, Gosse, Ann. Nat. Hist. ser. 2. iii. p. 257 (1849); Ill. B. Jam. pl. 45.

Four examples, in one of which the yellow crown is barely discernible. I have two examples of a second species of this genus from Jamaica, which is, I suppose, undescribed*. Before I had an opportunity of examining Mr. Osburn's specimens I was inclined to believe the latter were Mr. Gosse's *E. cotta*; but I now find that they are quite different,—*Elainea fallax*, as I propose to call it, belonging to the section of the group with a concealed white crest as in *E. pagana*; whereas *E. cotta* is more nearly allied to *E. placens* of Guatemala, and others, in which the crest is less concealed, and of a bright yellow.

35. *PITANGUS CAUDIFASCIATUS* (D'Orb.): La Sagra, Cuba, pl. 12; Gosse, B. Jam. p. 177.

One example of this bird, which, although abnormal in colouring, appears to be best placed with the *Pitangi*.

36. *MYIARCHUS VALIDUS*, Cab. Orn. Not. ii. p. 351.—*Tyrannula gossii*, Bp. Consp. p. 189.—*Tyrannus crinitus*, Gosse, p. 186, nec Americanorum.

Two ex. of this species.

* *ELAINEA FALLAX*, sp. nov.

Obscure olivaceo-viridis, alis caudaque fuscis, hac olivaceo extus limbata, illarum tectricibus et secundariis virescenti-albo extus late marginatis: pileo sub-cristato interne albo: subtus flavicans, gutture olivaceo induto: rostro obscure corneo, basi albicante: pedibus nigris.

Long. tota 5·2", alæ 2·7, caudæ 2·5, tarsi ·75.

Hab. In ins. Jamaica.

37. MYIARCHUS STOLIDUS (Gosse).—*Myiobius stolidus*, Gosse, B. Jam. p. 168.

Two ex. of this species, which seems to be best arranged among the smaller *Myiarchi*.

38. BLACICUS PALLIDUS, Cab. Journ. f. Orn. 1855, p. 480.—*Myiobius pallidus*, Gosse, p. 166.

Several ex. of this little species, which is, according to Cabanis, nearly allied to *B. caribæus* of Cuba, the type of this section of *Tyrannidæ*.

39. PLATYPSARIS NIGRA (Gm.).—*Lanius niger*, Gm.—*Pachyrhamphus niger*, Sclater, P. Z. S. 1856, p. 72.—*Tityra leuconotus*, Gray, et Gosse, p. 187.—*Pach. nigrescens*, Cab.

Several examples, in different stages of plumage.

40. CERYLE ALCYON (Linn.): Gosse, p. 81.

One ex.

41. TODUS VIRIDIS, Linn.: Gosse, p. 72.

One ex.

42. NYCTIBIUS JAMAICENSIS (Linn.): Gosse, p. 41.

Two ex.

43. CHORDEILES MINOR, Cab. Journ. f. Orn. 1856, p. 5.—*C. gundlachi*, Lawrence, Ann. Lyc. N. Y. vi. p. 165.—*C. virginianus*, Gosse, B. Jam. p. 33.

One example of this *Chordeiles*, obtained in April, which, judging from its dimensions, I must refer to the same species or local variety as that which occurs in Cuba, and has been distinguished by Dr. Cabanis and Mr. Lawrence. Its measurements are, long. tota 7·75", alæ 7·1, caudæ 3·7.

44. SIPHONORHIS AMERICANUS (Linn.).

Caprimulgus seu Noctua sylvatica jamaicensis minor, Ray, Syn. Av. et Pisc. (1713).

Small Wood-Owl, Sloane, Jam. ii. p. 296.

Caprimulgus jamaicensis, Briss. Av. ii. p. 480.

Caprimulgus americanus, Linn. S. N. i. p. 346; Gm. S. N. ii. p. 1032.

Siphonorhis genus novum Caprimulgidarum, affine Nyctidromo, sed rostro valde dilatato, apice uncinato, naribus tubularibus et longe eminentibus diversum: alæ modicæ: pedes gressorii, tarsi elongatis, nudis: digiti medii ungue pectinato, cauda rotundata.

Typ. et sp. un. *Siphonorhis americanus*.

♂. *Fulvo nigroque variegatus, colore capitis cinerascentiore:*

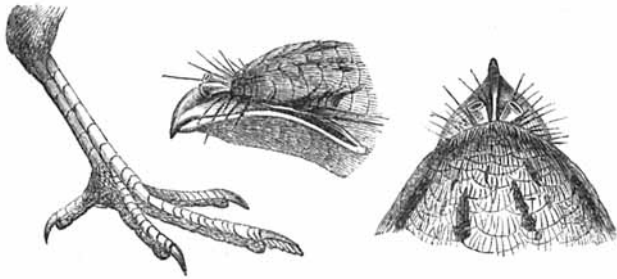
maculis quibusdam, plumarum scapos occupantibus, in capite elongatis, in dorso magis quadratis, nigris: alis nigris, pallido fulvo extus regulariter ocellatis et intus transvittatis: cauda fulvo nigroque minute variegata, fasciis transversis indistinctis nigris; margine lato apicali, in rectricibus mediis angustiore, albo: subtus dorso similis sed cervice albo torquata, et ventris medii plumis late albo terminatis.

♀ *torque cervicali et rectricum apicibus fulvescentibus.*

Long. tota 8·75", alæ 5·3, caudæ 4·8, tarsi ·95, digiti med. ·95.

Hab. In ins. Jamaica.

Mr. Osburn's collection contains a pair of this very singular Goatsucker, obtained at Freeman's Hall, Trelawny, in September 1859. The tickets attached to the two birds appear to have been changed, as the white-collared bird, which is evidently the male, is marked "female," and the other, "male." The form, which is quite new to



me, is easily distinguishable from other American *Caprimulgidæ* by its broadened bill, which is almost that of *Nyctibius*, the excessive elongation of the tubular nostrils, and the long naked tarsi (see woodcut). I should be inclined to place it next to *Nyctidromus*, with which it agrees in the latter point; and I have no doubt that its habits, of which unfortunately we have no record, are more or less terrestrial.

That this bird (and not *Nyctidromus derbianus*, as Mr. Cassin* has attempted to show) is the Jamaican species of Sloane, upon which Linnæus established his *Caprimulgus americanus*, I think there can be little doubt. Mr. Cassin has elaborately discussed the whole subject and comes to this conclusion—"that a species of *Nyctidromus* does inhabit Jamaica, and which is not mentioned by Mr. Gosse, Sloane's figure and description clearly demonstrate." Now, no true *Nyctidromus* is known to inhabit Jamaica; but this aberrant form, which comes nearest to that genus, probably takes its place. It is also especially remarkable for its elevated tubular nostrils—the only character given by Linnæus for the diagnosis of his *Caprimulgus americanus*†, and, as I believe, of itself sufficient to distinguish this peculiar form from every other known Caprimulagine bird.

* Proc. Acad. Philad. 1851, p. 180 *et seq.*

† "*narium tubulis eminentibus.*"—Linn. S. N. i. p. 346.

45. CHÆTURA ZONARIS (Shaw).—*Acanthylis collaris*, Gosse, B. Jam. p. 51.

Several examples, not differing essentially from continental specimens. I have seen the same bird from S. Domingo.

46. LAMPORNIS PORPHYRURA (Shaw). — *Lampornis mango*, p. 88.

47. POLYTMUS CEPHALATER, Bp. Consp. p. 72.—*Trochilus polytmus*, Gosse, p. 97.

48. COCCYZUS SENICULUS (Linn.): Gosse, p. 281.

One specimen from Savannah la Mar.

49. PIAYA PLUVIALIS (Gm.): Gosse, p. 277.

50. CROTOPHAGA ANI, Linn.: Gosse, p. 282.

Adults and nestlings. The sexes are alike, the sharp keel of the upper mandible being equally developed in both.

51. CENTURUS RADIOLATUS (Wagl.): Gosse, p. 271.

One ex.

52. CONURUS NANUS (Vig.). — *Psittacara nana*, Vig. Zool. Journ. v. p. 273.—*C. flaviventer*, Gosse, p. 263.

Several ex. of both sexes, between which there is no external difference.

53. CHRYSOTIS AGILIS (Linn.): Gosse, p. 266.

Two ex., of which the female, as marked, is rather smaller in dimensions.

54. CHRYSOTIS COLLARIA (Linn.).—*Ps. collarius*, Linn. S. N. p. 149.—*P. leucocephalus*, Gosse, p. 269.—*Pionus vinaceicollis*, Lafr. R. Z. 1846, p. 321.

Two ex., of which that marked female has the white front very narrow. This species, as I have already pointed out, is represented in Cuba by *C. leucocephala*, in S. Domingo by *C. sallæi*, and in Porto Rico by *Chrysotis vittata* (see P. Z. S. 1857, p. 225). When these islands formed one piece of land the region was, no doubt, occupied by a common progenitor, a certain *Chrysotis prisca*, from which these four birds have become modified during their descent.

55. HYPOTRIORCHIS COLUMBARIUS (Linn.): Gosse, p. 17.

56. STRIX PRATINCOLA, Bp.: Gosse, p. 23.

This seems to be more like the N. American *Strix pratincola* than to the Cuban *Strix furcata*, though I should mention that I have not had an opportunity of making an accurate comparison of specimens.

57. *PSEUDOSCOPS GRAMMICUS* (Gosse).—*Ephialtes grammicus*, Gosse, B. Jam. p. 19.—*Otus grammicus* (subgen. *Pseudoscops*), Kaup, Trans. Zool. Soc. iv. p. 231.

One example of this very distinct Owl, the affinities of which seem to be rather with *Otus* than with *Scops*.

58. *PATAGIENAS CARIBÆA* (Linn.): Bp. Consp. ii. p. 54; Gosse, p. 291.

59. *PATAGIENAS LEUCOCEPHALA* (Linn.): Gosse, p. 299.

60. *CHLORÆNAS INORNATA* (Vig.): Bp. Consp. ii. p. 53.—*C. rufina*, Gosse, p. 296.

61. *ZENAIDA LEUCOPTERA* (Linn.): Gosse, p. 304.

62. *ZENAIDA AMABILIS*, Bp.: Gosse, p. 307.

63. *CHAMÆPELIA PASSERINA* (Linn.): Gosse, p. 311.

64. *GEOTRYGON MONTANA* (Linn.): Gosse, p. 320.

Mr. Gosse has forwarded examples of all these seven *Columbidæ*, concerning which I have only to remark that, if the continental form of *Chamæpelis* (usually called *passerina*) is really distinct from the Antillean, it seems to be the latter that should bear the name *passerina*. The Jamaican bird, as Mr. A. Newton has remarked (*Ibis*, 1859, p. 254), is the same as the species which inhabit the Virgin Islands—the *Chamæpelis trochila* of Bonaparte (Consp. ii. p. 77), which name must in this case give place to the Linnean one.

65. *NUMIDA MELEAGRIS* (Linn.): Gosse, p. 325.

Introduced from Africa.

66. *ORTYX VIRGINIANUS* (Linn.): Gosse, p. 328.

Introduced from the United States.

67. *ÆGIALITIS MELODUS* (Ord): Gosse, p. 330.

68. *GALLINAGO WILSONII* (Temm.): Gosse, p. 353.

69. *GAMBETTA MELANOLEUCA* (Gm.): Gosse, p. 352.

70. *RHYACOPHILUS SOLITARIUS* (Wils.): Gosse, p. 350.

71. *TRINGOIDES MACULARIUS* (Linn.): Gosse, p. 349.

72. *TRINGA WILSONI*, Nutt.—*Pelidna pusilla*, Gosse, p. 348.

73. *TRINGA BONAPARTII*, Schleg.

74. *HERODIAS EGRETTEA* (Gm.): Baird, p. 666.

Two ex. in Mr. Osburn's collection I refer to this species, which is

not mentioned by Gosse. In the larger the tarsus measures 6·4 inches, in the smaller (marked female) 5·5 inches. The bill is yellow, with a blackish tip to the upper mandible. Mr. Osburn has marked his specimens "*Egretta leuce?*," and has given some interesting notes on its habits under this name in 'The Zoologist' (p. 6932).

75. GARZETTA CANDIDISSIMA, Bp.: Baird, p. 665; Gosse, p. 336; Osburn in Zoologist, p. 6932.

One ex., obtained in Aguatta Vale, Metcalf, Oct. 1859. "Bill black, all but the base, which, like the skin of the front, is bright yellow; tarsi black in front, behind of the same colour as the toes—a greenish yellow."—Osburn, *l. c.*

76. FLORIDA CÆRULEA (Linn.): Baird, p. 671.—*Egretta cærulea* et *E. nivea*, Gosse, pp. 334 et 337; Osburn in Zoologist, pp. 6932, 6933.

Two ex. in adult blue dress, and three in the white dress of immaturity (*Egretta nivea*, Gosse).

77. ARDEA HERODIAS, Linn.: Gosse, p. 346.

78. ARDETTA EXILIS (Gm.): Gosse, p. 343.

79. NYCTICORAX VIOLACEUS (Linn.).

One ex. of this Night-heron.

80. ARAMUS GIGANTEUS (Bp.): Baird, B. N. Am. p. 657.—*Nothorodius holostictus*, Cab. Journ. f. Orn. 1856, p. 426.—*Aramus scolopaceus*, Gosse, p. 355.

One female example agreeing with the Northern form, and distinct from the Southern *A. scolopaceus*.

81. RALLUS CREPITANS (Gm.): Baird, p. 747.—*Rallus longirostris*, Gosse, p. 364.

82. PORZANA CAROLINA (Linn.): Gosse, p. 371.

One ex.

83. PORZANA JAMAICENSIS (Gm.): Gosse, p. 375.

Several ex.

84. CREX MINUTA (Lath.): Gosse, p. 372.

One ex., from "Rosslin Castle."

85. FULICA AMERICANA, Gm.: Gosse, p. 384.

86. GALLINULA GALEATA (Licht.): Gosse, p. 381.

87. PORPHYRIO MARTINICUS (Linn.): Gosse, p. 377.

88. *QUERQUEDULA DISCORS* (Linn.): Gosse, p. 401.

Two ex. I can scarcely believe that Gosse's *Cyanopterus inornatus* is really different from this species; but his specimens should be examined.

89. *SPATULA CLYPEATA* (Linn.): Gosse, p. 408.

One ex., a female obtained in November.

90. *PODILYMBUS PODICEPS* (Linn.): Baird, B. Am. p. 898; Gosse, p. 438.

Three ex., to each of which is attached a paper containing a mass of feathers "taken out of the pyloric cavity."

91. *PODICEPS DOMINICUS* (Linn.): Gosse, p. 400.

One ex.

92. *STERNA REGIA*, Gambel: Baird, B. N. Am. p. 858.—*Thalasseus cayanus*, Gosse, p. 431.

One ex., obtained in March, with wing-feathers in moult.

5. ON SOME POINTS RELATING TO THE HABITS AND ANATOMY OF THE OCEANIC AND OF THE FRESHWATER DUCKS, AND ALSO OF THE HARE (*LEPUS TIMIDUS*) AND OF THE RABBIT (*L. CUNICULUS*), IN RELATION TO THE QUESTION OF HYBRIDISM. BY EDWARDS CRISP, M.D., F.Z.S., ETC.

This communication was suggested by the exhibition at our last meeting, by Mr. Bartlett, of four hybrid ducks between the Summer Duck (*A. sponsa*) of North America, the Pochard (*Fuligula ferina*), and the Ferruginous Duck (*Fuligula nyroca*). Mr. Bartlett thought that the progeny of these hybrids would be prolific. In the discussion which followed concerning these birds, I expressed my belief that the hybrid between the hare and the rabbit was a much more remarkable occurrence, taking the habits and the anatomy of the animals into account, than that of a cross between an oceanic and a freshwater duck. From this opinion several of the members dissented.

It will now be my object to make a fair investigation of this matter; and as the question of hybridism is one becoming daily of greater importance, I think that our time will not be unprofitably occupied, more especially as the comparisons I am about to institute will, I think, furnish some matters of physiological interest.

And first, of the Ducks; and I speak chiefly of British ducks. In this family of birds there is, for the most part, a great general resemblance, whether we look to their habits or to their anatomy. They have been divided into the Oceanic and Freshwater ducks; but it must be observed that they both frequent the sea, and also the freshwater rivers, although the first-named ducks are more limited to the ocean,

to which their structural peculiarities render them better adapted. Their flesh, as regards flavour, has the same character, although modified somewhat by the nature of the food. In the sexual * differences of colour (excepting the genus *Tadorna*) there is a great general resemblance; and the same may be said, as far as we know, of the period of incubation. The eggs, comparatively speaking, both as regards number and appearance, are very uniform. Their nidification, too, including the abstraction of down from the body of the female, is nearly of the same kind; and the nature of their food, both animal and vegetable, is very similar. Of animal food the oceanic and diving ducks obtain a greater variety, including univalve and bivalve shells; but some of the freshwater ducks (so called), as the Shoveller (*Anas clypeata*), obtain a large quantity of these, as I have verified in several instances by dissection.

If we look to their internal organization, we have here likewise a great general resemblance. The lungs, heart, gullet, gizzard, intestines and their appendices—the pancreas, spleen, kidneys, and oil-glands—have nearly all the same character.

I have placed on the table the sterna of twenty-two different species of ducks, and likewise the tracheæ of nearly all the species of our British ducks; and it will be seen that, with the exception of the Common Scoter (*Anas nigra*) and the Surf Scoter (*A. perspicillata*), the lower part of the air-tube is furnished with a bony enlargement, more or less complete in the different species of oceanic ducks, and affording in these a greater variation as to form: thus, in the King Duck (*A. spectabilis*) and in the Eider (*A. mollissima*) this protuberance is without membranous divisions, as in the freshwater ducks; and the same may be said of the Velvet Scoter (*A. fusca*); but the enlargement in the air-tube of this bird is seated some distance above the bronchi.

In Yarrell's 'British Birds,' vol. iii. pp. 148, 202, descriptions are given of the freshwater and oceanic ducks. The characteristics of the former are said to be length of neck and wings, round tarsi, unlobated and free hind toe. "In habits they may be stated generally as frequenting fresh water, but passing much of their time on land, feeding in ditches and about the shallow margins of pools, on aquatic plants, insects, worms, and occasionally on small fish, taking their food at or near the surface, possessing great powers of flight, but seldom diving unless pursued. Of their internal parts, the stomach is in the greatest degree muscular, forming a true gizzard; the intestines long; the cæcal appendages from 6 to 9 inches in length in the larger birds, and decreasing only in proportion to the size of the species. Of the bones it may be observed that the ribs are short, the angle formed by the union of the first pair on each side extending but little beyond the line of the posterior edge of the sternum; the keel of the breast-bone is deep, affording great extent of surface for the attachment of large and powerful pectoral muscles; the enlargement at the bottom of the trachea in all of them is of

* I do not speak of the changes of plumage in the oceanic ducks, because we have yet much to learn respecting this matter.

bone only. The males of this species are further remarkable for becoming for a time during summer more or less like the females," &c.

At page 202, in speaking of the oceanic ducks, their food is said to be "fish, shelled mollusca, crustacea, and marine insects, but little or no vegetable production. Their powers of flight moderate, and their walk embarrassed, from the backward position of their legs. Of their soft parts, the œsophagus is capable of great dilation; the stomach is a muscular gizzard, but the internal cavity is large, and the sides comparatively thin. The ribs are elongated, and the keel of the breast-bone decreases in depth in those species which in their habits most resemble the *Merganser*."

In the above account there are several inaccuracies. Thus, the gizzard in many of the diving ducks, taking the weight of the bird into consideration, is quite as muscular as in the freshwater ducks; indeed the nature of their food requires this provision. I have not found either the above-mentioned difference in the œsophagus or in the length of the alimentary canal and appendices. The oceanic ducks, moreover, take a large amount of vegetable food; and the proportional size of the pectoral muscles in many of them is quite as great as in the freshwater ducks. The keel of the sternum, too, in some, is as deep; indeed the sterna of two of the ducks in question (the Summer Duck and the Ferruginous) bear in every respect a great resemblance; but to bring this matter to a more practical bearing, let me take eight ducks that I have recently dissected (four oceanic and four freshwater), by way of comparison of the length of the intestinal tubes. The appendices are included in the length of the canal.

Name.	Weight.	Length of alimentary canal.	Length of appendices.
	oz.	ft. in	in.
Scaup (<i>Anas marila</i>)	27	7 9	13
Golden-eye (<i>A. clangula</i>)	31	5 8	10
Pochard (<i>A. ferina</i>)	37	5 0	4
Common Scoter (<i>A. nigra</i>)	38½	6 0	1½
Shoveller (<i>A. clypeata</i>)	20	5 7	6
Pintail (<i>A. acuta</i>)	36	5 3	12
Wild Duck (<i>A. boschas</i>)	42	7 2	10
Garganey Teal (<i>A. querquedula</i>)	13	5 8	3½

In twenty skeletons of different species of ducks that I have lately examined, I find that all have fourteen cervical vertebræ, seven caudal, and nine pairs of ribs, with the exception of the Summer Duck (*Anas sponsa*) and the *Anas cæruleata*: these have only eight ribs; but I scarcely need say that more than one specimen must be examined to ascertain whether this is the normal number.

Time will not allow me to touch upon the minor differences, external and internal, which apply more or less to all families of birds. Speaking generally, the short, thick-set, rounded form of the oceanic duck, its short wings and neck, shorter and flatter tarsi, lobated

hind toe, more elastic breast-feathers, and the greater quantity * of grey down upon the skin, will serve at once to distinguish it. Internally the form of the lower part of the air-tube in the male, the wider and shorter sternum, in many instances with a less developed keel, and the form of the pelvis, are for the most part sufficiently characteristic; but they are none of them, I think, as regards the question at issue, of special importance.

One of my objects has been to point out some of the errors (as I believe) that generally prevail respecting portions of the anatomy of the oceanic ducks, and to show that several of the distinctions made are not well-founded. In my concluding paper † “On the Presence or Absence of Air in the Bones of Birds,” I hope to exhibit other differences, not before recorded, respecting the absence of air in the *humeri*, and the muscular arrangement of the air-cells in some of the Sea-ducks (so called).

But lastly, as to the inquiry whether these hybrid ducks between the Summer Duck, the Pochard, and the Ferruginous Duck are likely to breed together as suggested by Mr. Bartlett, I have no hesitation, looking to their anatomy, in which there is a great general resemblance, to answer the question in the affirmative; but whether the progeny of these hybrids will also be prolific, is a matter that time only can determine.

I now come to the more interesting part of my subject, viz. that of the *Leporines*—hybrids, so called, between the hare and the rabbit. It has been stated that M. Rouy, of Angoulême, has bred for the market a thousand of these *Leporides* yearly—that they are fertile both with the hare and the rabbit, and with each other. I have written to M. Rouy, but up to the present time I have received no answer. It is reported that the cross is effected by keeping the animals together when very young. In the Society’s Collection there are now several of these *Leporines*, and two of them have litters of young; but whether they are of the first cross it is difficult to determine. The adult animals have a hare-like character; they are large, weighing about 5 lbs., with long ears and long hind legs; but this description will equally apply to some varieties of the rabbit. I have, however, carefully examined the fur (microscopically and otherwise); and about the hare-like character of this *I think there cannot be a question*. The hair is long, and has the same party-coloured appearance (black and fawn) as in the hare—a peculiarity that I have not seen in any variety of the rabbit. The disinclination of the male for copulation is another feature very unlike the character of the rabbit. Of the two females mentioned, one has five young ones, and the other two: of the former litter two are black; of the latter both are grey: they are born blind, are wild, and, unlike the tame rabbit, shriek when handled. The female makes her nest of down, and covers her young. Mr. Bartlett has kindly given me one of his young *Lepo-*

* The Summer Duck (*A. sponsa*) has as complete a covering of grey down as any of the oceanic ducks that I have examined, and in this respect it differs from all the British freshwater ducks that have come under my notice.

† See P. Z. S. 1857, pp. 9, 215.

lines, about three and a half months old, for examination. It was bred between the male Leporine from Paris and a common black rabbit. It weighed 3 lbs. 11 oz. Its fur and most of its external characters partook chiefly of those of the rabbit; and the same may be said of its visceral anatomy: the trachea, lungs, and heart are comparatively small; the length of the alimentary canal 17 feet 6½ inches. The flesh was white, and in flavour like that of the rabbit.

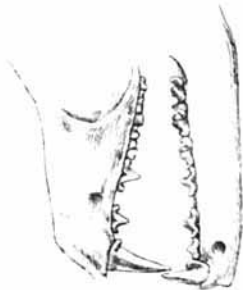
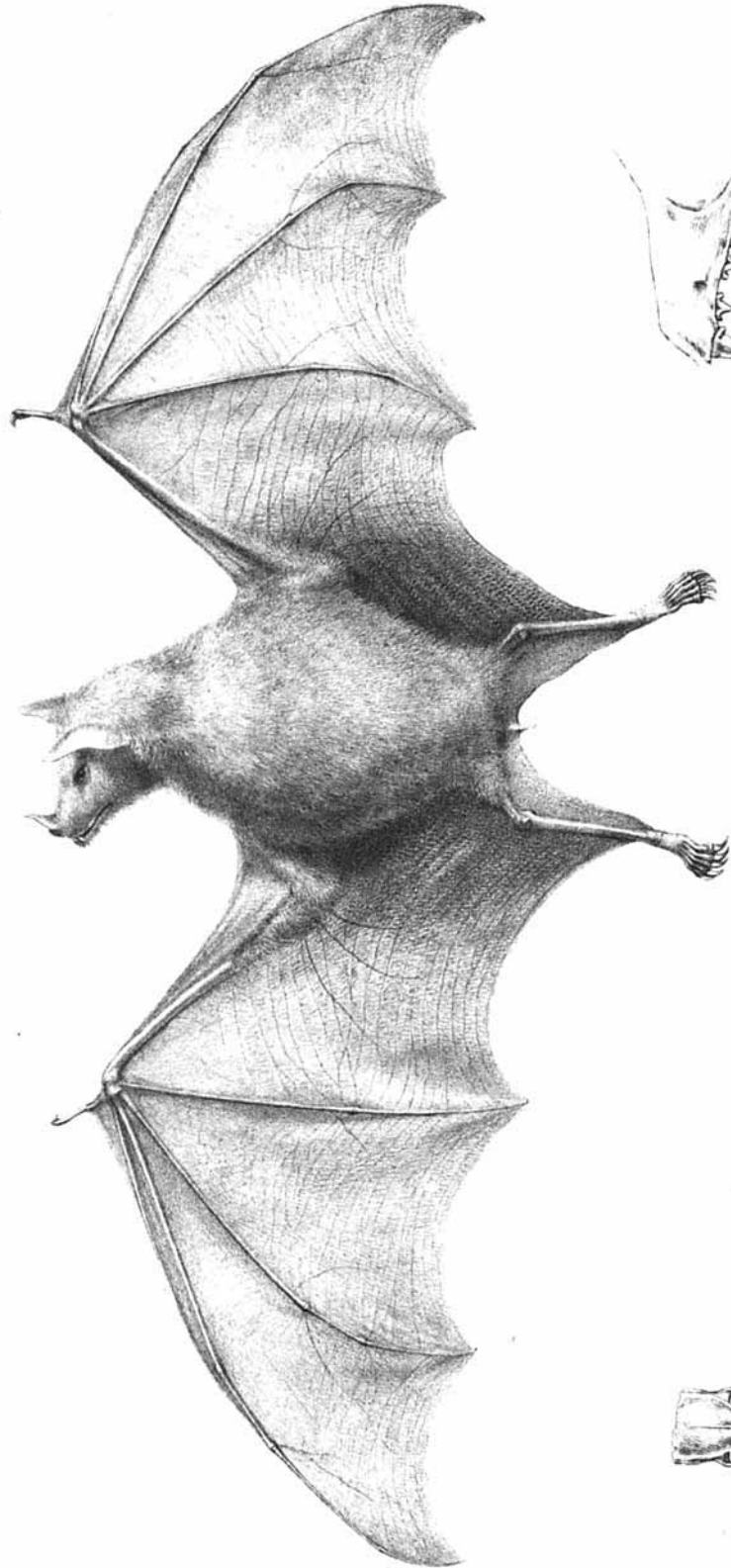
With the above I have examined two hares and two wild rabbits, male and female, and I have weighed ten adult specimens of each; the average weight of the hares was 6 lbs. 11 oz., that of the rabbits 3 lbs. ½ oz. By way of comparison I have taken a hare weighing 7 lbs. and a rabbit weighing 3 lbs. 5 oz. I have measured and weighed every part of importance, but I need only mention some of the comparisons:—Brain of hare 210 grains, eye 75 grains, lungs 684 grains, heart (bloodless) 655 grains, trachea very large, length of alimentary canal 18 feet. Brain of rabbit 125 grains, eye 35 grains, lungs 193 grains, heart (bloodless) 119 grains, trachea very small, alimentary canal 15 feet 1 inch. I may remark here that I have sometimes found the intestinal tube in the hare (probably in young specimens) much shorter than that before mentioned. I have compared the spermatozoa, the blood-corpuscles, and the various viscera not mentioned above, and I find no important difference in them.

As regards the skeleton, I have been unable to discover any appreciable difference, except in its size and in the length of the hind extremities; but in the Museum of the College of Surgeons there is a skeleton of the Lop-eared Rabbit (Preparation 1949); and if the posterior limbs are compared with those of the hare (Prep. 1914), the resemblance will be found to be very great.

In taking a retrospect of the anatomy of these animals we find a great similarity; the interesting and important differences are in the *heart, lungs, and trachea*. These I pointed out in 1854, in a paper read before the London Physiological Society, "*On the Weight, Form, Size of the Cavities, and Thickness of the Parietes of the Heart in the Vertebrate Animals*.*" On referring to the weights of the above-named organs, it will be seen that the proportions are *very remarkable*. Thus, the heart of the hare (and I speak from the examination of many specimens) is nearly five times the weight of that of the rabbit; the lungs are nearly four times as heavy; and the calibre of the trachea three or four times as great; the rings of the air-tube are about the same number in both.

But it must be remembered that these are differences in *degree*, and not in *kind*, and may be explained to some extent by the habits of the animal. The comparative swiftness and durability of speed of the hare require a larger and stronger circulating organ; and the same remark will apply to the respiratory apparatus. If, however, we have this similarity of structure, in many respects (as is well known) the habits of the animals are widely different. The period of gestation in the hare is said to be a month, that of the *wild* rabbit three weeks; but I am not acquainted with any reliable evidence

* Lancet, 1854.



G. H. Bond.

MONOPHYLLUS REDMANII.

W. West. imp.

upon this subject. The young of the rabbit are naked and blind; whilst those of the hare see, and have a hairy covering at birth; the number of young in the hare is from two to four, that of the rabbit from four to seven (early in the spring I have generally found four). The rabbit burrows, takes down from its body, covers its young and leaves them at night; whilst the hare (English) seldom, unless hard pressed, will go to earth. Without pointing out minor differences, I have said enough to lead some to suppose that my first impression was correct, viz. that the cross between the hare and the rabbit was a more extraordinary one than that between the ducks in question. But a closer investigation leads me at once to acknowledge my error; for, looking especially to the comparative anatomy, and believing, as I do, that time and circumstances may produce essential alterations in the habits and in the external form, colour, and size of animals, I think that there are more unstable and far-fetched theories in physiology than the belief that the hare and the rabbit may have been originally one and the same animal.

March 12th, 1861.

John Gould, Esq., F.R.S., V.P., in the Chair.

Dr. P. L. Slater exhibited a very fine and perfect example of *Pentacrinus caput-medusæ*, which had been placed in his hands by Lieut.-Col. P. C. Cavan, F.Z.S. This specimen had been dredged up in 60 fathoms' water on the coast of S. Lucia, West Indies, by a fisherman, whose lines had become entangled in it.

Dr. Crisp exhibited drawings of two fishes from a salt-water lagoon near Cape Coast Castle, West Africa.

The following papers were read :—

1. ON THE GENUS MONOPHYLLUS OF LEACH.

BY ROBERT F. TOMES, CORR. MEMB.

(Plate XV.)

Glossophaga, Geoff. Mém. du Mus. t. 4. p. 411, 1818.

Monophyllus, Leach, Linn. Trans. xiii. p. 73, 1820.

Nicon, Gray?, P. Z. S. 1847, p. 15.

Having recently examined a collection of Bats from Jamaica, collected by the late Mr. Osburn, and containing several specimens of a Leaf-nosed Bat which, on comparison with the mutilated type of Leach's genus *Monophyllus*, proves to be identical with it, I have thought that a more detailed description taken from these specimens