

attacked by another set of ants, and hurry off to protect their nest. By repeatedly applying the same matter to a nest, the ants at last become so annoyed that they emigrate, carrying their females and eggs to a distance and forming a new colony.

This plan is not generally known, even here in the State of Antioquia; and I have thought that our colonists might profitably be made acquainted with it. By its use we may ward off an unexpected attack by the invader until an opportunity offers of exterminating the brood; and when this cannot be done, it may constitute the only means of defence for crops.

The vegetable matter spoken of is naturally an excellent manure, as I have observed in the case of rose-bushes which I have protected by its use.

Should you consider the above observations to be useful, I trust that you will be so good as to make them known to the Society.

I am, Sir,

Your obedient servant,

ROBERT B. WHITE.

The following papers were read:—

1. Notes on some Species of Chiroptera from Zanzibar, with Descriptions of new and rare Species. By G. E. DOBSON, M.A.

[Received October 6, 1879.]

To the kindness of Dr. Robb, H.M. Indian Army, I owe the material which has furnished the following notes. Seven species are represented in the collections; and all the specimens are well preserved in alcohol.

# 1. EPOMOPHORUS MINOR, n. sp.

With the exception of *Ep. pusillus*, this is the smallest species of *Epomophorus* yet discovered. In the form of the palate-ridges it certainly very closely resembles *E. macrocephalus*, the ridges being similarly shaped, the fifth ridge<sup>1</sup> having, in most specimens, the same peculiar lozenge-shaped depression in the centre, hitherto considered by me to be characteristic of that species. The head, however, is of very different proportions, being comparatively much smaller; and there is less difference between the males and females in the length of the muzzle; the width of the palate is also greater in proportion to its length.

Tail rudimentary, but distinct, about quarter of an inch in length.

Fur greyish-brown, with a slightly yellowish tinge both above and beneath; paler beneath, but no white patch on the abdomen of

<sup>1</sup> See Catal. Chiropt. Brit. Mus. 1878, pl. ii. fig. 2.



either males or females. The usual white tuft at the base of the ears is distinct; and, in males, the long hairs lining the shoulder-pouches project conspicuously.

The following Table exhibits the measurements of two adult specimens, a male and a female with *fœtus in utero*; also, for comparison, the measurements of an adult male and female of *E. macrocephalus*:—

	<i>E. minor.</i>		<i>E. macrocephalus.</i>	
	ad. ♂	ad. ♀	ad. ♂	ad. ♀
Length, head and body.....	4.0	4.1	6.3	5.0
„ head.....	1.65	1.55	2.6	2.3
„ eye from tip of nostril..	0.65	0.55	1.2	1.0
„ ear .....	0.72	0.7	0.9	0.9
„ forearm .....	2.5	2.4	3.5	3.3
„ third finger, metacarpal	1.7	1.65	2.5	5.7
„ „ „ 1st ph. ..	1.1	1.1	1.5	
„ „ „ 2nd ph. ..	1.65	1.65	2.0	
„ fifth finger, metacarpal	1.55	1.5	2.25	4.3
„ „ „ 1st ph. ....	0.8	0.8	1.0	
„ „ „ 2nd ph. ..	0.8	0.8	1.1	
„ tibia.....	0.96	0.9	1.3	1.25
„ foot .....	0.6	0.6	0.85	0.85

## 2. EPOMOPHORUS LABIATUS.

*Pteropus labiatus*, Temminck, Monogr. Mammal. ii. p. 83, pl. 39.

*Epomophorus labiatus*, Dobson, Catal. Chiropt. Brit. Mus. p. 11.

Two specimens in the collection are referable to this species, hitherto known only from dried and badly preserved skins. The type in the Leyden Museum consists of a skin of an immature male individual; but there is another skin in the same collection similarly labelled, which evidently belongs to a full-grown female of the same species, and with this the specimens from Zanzibar very closely agree in measurements, as may be seen from the table below. I have therefore referred them to *E. labiatus*, which, however, as I have already surmised<sup>1</sup>, may turn out to be (when a sufficient number of specimens are available for examination) a local variety only of *E. gambianus*.

The palate-ridges closely resemble those of *E. gambianus* (see *op. cit.* pl. ii. fig. 3a); but the fifth ridge is marked by a slight groove only.

Fur above yellowish brown, with ashy extremities; beneath much paler; on the interfemoral membrane and legs extending much less densely than in *E. gambianus*; a very few hairs only appear on the backs of the feet. In the females there are distinct, though rudimentary, shoulder-pouches.

The following Table exhibits the measurements of an adult female of this species with well-worn teeth, and of an adult female of

<sup>1</sup> *Op. cit.* p. 12.



*E. gambianus*; and it may be seen that considerable differences exist:—

	<i>E. labiatus.</i>	<i>E. gambianus.</i>
Length, head and body .....	5.0	5.5
„ head .....	1.95	2.0
„ eye from tip of nostril .....	0.8	0.7
„ ear .....	0.8	0.85
„ forearm .....	2.85	3.3
„ thumb .....	1.2	1.4
„ third finger, metacarpal .....	1.95	2.25
„ „ „ 1st ph. ....	1.3	1.5
„ „ „ 2nd ph. ....	2.0	2.25
„ fifth finger, metacarpal .....	1.9	2.15
„ „ „ 1st ph. ....	0.9	1.2
„ „ „ 2nd ph. ....	0.95	1.15
„ tibia .....	1.15	1.2
„ foot .....	0.75	0.7

### 3. *TRIÆNOPS PERSICUS*, var. *AFER*.

*Triænops persicus*, Dobson, J. A. S. B. 1871, p. 455, pl. xxviii.; id. Catal. Chiropt. Brit. Mus. (1878), p. 124, pl. viii. fig. 1.

*Triænops afer*, Peters, Monatsb. Akad. Berl. 1876, p. 913.

After a most careful comparison of the specimens in the collection (which must be referred to the same species as that indicated by Prof. Peters under the name of *T. afer*) with others of *T. persicus* from Shiraz, I am unable to find any differences of importance. I find that the characters enumerated as distinctive of *T. afer*, such as the form of the emarginations on the inner side of the ear-conch and the shape of the central lanceolate process of the nose-leaf, are variable to the extent described in the different specimens, while the darker colour of the fur observable in the African form is probably the normal shade in this species, the type specimens from Persia having fur of a paler colour in conformity with that of other species of animals inhabiting the sandy districts about Shiraz<sup>1</sup>.

The following Table shows how very closely the measurements of the Zanzibar specimens agree with those of one of the specimens from Persia, from among which the type of this species was taken:—

	Shiraz.	Zanzibar.
Length, head and body .....	2.3	2.4
„ tail .....	1.2	1.2
„ ear .....	0.45	0.4
„ forearm .....	2.0	2.0
„ third finger, metacarpal .....	1.6	1.45
„ „ „ 1st ph. ....	0.5	0.55
„ „ „ 2nd ph. ....	0.7	0.65
„ fourth finger, metacarpal .....	1.45	1.35
„ „ „ 1st ph. ....	0.4	0.45
„ „ „ 2nd ph. ....	0.35	0.35

<sup>1</sup> See note on the colour of the fur in *Vesperugo pipistrellus* and other species, in Catal. Chiropt. Brit. Mus. p. 225.



	Shiraz.	Zanzibar.
Length, fifth finger, metacarpal . . . . .	1·1	1·05
„ „ „ 1st ph. . . . .	0·55	0·55
„ „ „ 2nd ph. . . . .	0·4	0·4
„ tibia . . . . .	0·65	0·6
„ foot . . . . .	0·35	0·35

#### 4. RHINOLOPHUS ÆTHIOPS.

*Rhinolophus æthiops*, Peters, Monatsb. Akad. Berl. 1868, p. 637 ; Dobson, Catal. Chiropt. Brit. Mus. p. 122, pl. vii. fig. 12.

Specimens not differing in any respect from the type.

#### 5. NYCTERIS HISPIDA.

*Vespertilio hispidus*, Schreber, Säugeth. i. p. 169 (1775).

*Nycteris hispida*, Dobson, Catal. Chiropt. Brit. Mus. p. 162, pl. xi. fig. 1 (teeth).

An adult female, agreeing with typical examples in the form and relative development of the teeth, in the colour of the fur, and in the shape of the tragus, but differing in the longer ears and slightly greater size throughout.

#### 6. NYCTERIS GRANDIS.

*Nycteris grandis*, Peters, Monatsb. Akad. Berl. 1865, p. 358 ; Dobson, Catal. Chiropt. Brit. Mus. p. 164.

Two perfectly adult specimens of this species, which, by their much greater size, show that the type in the Leyden Museum, and the larger specimen in the British Museum, are both examples of immature individuals. In these specimens, owing evidently to the growth of the adjoining teeth, the small second premolar is much smaller proportionally, and is crushed in between the first premolar and the first molar.

The following are the measurements of one of these specimens, an adult male:—

Length, head and body 3'' ; tail 3'' ; head 1''·15 ; ear 1''·35, tragus 0''·3 × 0''·1 ; forearm 2''·5 ; thumb 0''·65 ; third finger—metacarp. 1''·8, 1st ph. 1''·2, 2nd ph. 1''·5 ; fifth finger—metacarp. 2''·2, 1st ph. 0·7, 2nd ph. 0''·65 ; tibia 1''·2 ; calcaneum 1''·0 ; foot 0''·55.

#### 7. NYCTERIS ÆTHIOPICA.

*Nycteris æthiopica*, Dobson, Catal. Chiropt. Brit. Mus. p. 165, pl. xi. fig. 3 (tragus).

The collection includes the first obtained specimens of this species, preserved in alcohol. These show how difficult it is to correctly describe species from dried skins ; for the tragus, instead of being narrower than in *N. javanica*, as originally stated by me, is really broader and altogether larger. The drawing of the tragus (referred to above) which accompanies my description, however, is quite correct. The specimens agree very closely in size ; and the following are the measurements of the largest :—

Length, head and body 2''·35 ; tail 2''·25 ; head 0''·9 ; ear 1''·15,



tragus  $0''\cdot3 \times 0''\cdot15$ ; forearm  $1''\cdot95$ ; thumb  $0''\cdot55$ ; third finger—metacarp.  $1''\cdot4$ , 1st ph.  $1''\cdot0$ , 2nd ph.  $1''\cdot2$ ; fifth finger—metacarp.  $1''\cdot65$ , 1st ph.  $0''\cdot55$ , 2nd ph.  $0''\cdot55$ ; tibia  $0''\cdot95$ ; calcaneum  $0''\cdot7$ ; foot  $0''\cdot45$ .

## 2. Notice sur quelques Coquilles du Pérou.

Par le PRINCE LADISLAS LUBOMIRSKI.

[Received October 7, 1879.]

(Plates LV. & LVI.)

Les deux naturalistes polonais, MM. Jelski et Stolzmann, qui ont fait l'exploration du Haut-Pérou, l'un depuis 1870 jusqu'à 1874, l'autre depuis 1875 jusqu'à 1878, ont envoyé de riches collections au Musée de Varsovie; entre autres objets zoologiques, ils nous ont procuré de ces contrées différentes espèces de coquilles terrestres, les unes déjà connues, d'autres encore inédites, que je me propose de publier dans ces notices. La description détaillée des localités qu'ils ont parcourues, a été déjà mainte fois consignée dans les Listes des Oiseaux du Pérou, par le Conservateur du Musée de Varsovie, M. Taczanowski, et publiée dans les 'Proceedings' de la Société.

### 1. SUCCINEA PERUVIANA, Phil.

*Succinea peruviana*, Phil., Monogr. Helic. viv. Pfr. t. v. p. 38.

Lima, envoyée par M. Jelski en 1871.

### 2. HELIX (AMMONOCERAS) TROCHILIONEIDES, D'Orb.

*Helix (Ammonoceras) trochilioneides*, D'Orb., Monogr. Helic. viv. Pfr. t. i. p. 113.

Lima, envoyée par M. Jelski en 1871.

### 3. HELIX (POLITA) SANTANAËNSIS, Pfr.

*Helix (Polita) santanaënsis*, Pfr., Monogr. Helic. viv. Pfr. t. iv. p. 82.

Tambillo, envoyée par M. Stolzmann en 1878.

### 4. HELIX (SYSTROPHIA) PSEUDO-PLANORBIS, n. sp. (Plate LV. figs. 1, 2, 3.)

*Species* Helici gyrellæ, Mor., affinis. Testa latissime umbilicata, planorboidea, oblique confertim striata, albida, epidermide lutescente obtecta; spira fere plana, sutura profunda; anfr. 6-7, ultimus vix depressus, non descendens; apert. diagonalis sub-oblique rotundata; perist. simplex, margine columellari regulariter arcuato.

Diam. maj.  $16\frac{1}{2}$ , min. 8, alt. 3 mill.

Pujupé, entre Hualguayoc et Chota, à 10,000 pieds d'altitude, trouvée sous un tronc d'arbre mort, envoyée par M. Stolzmann au nombre d'une cinquantaine d'exemplaires en 1878.



Dobson, G. E. 1879. "1. Notes on some Species of Chiroptera from Zanzibar, with Descriptions of new and rare Species." *Proceedings of the Zoological Society of London* 1879, 715–719.

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