

ON A NEW GENUS AND SPECIES OF RHINOLOPHIDÆ, WITH DESCRIPTION OF A NEW SPECIES OF VESPERUS, AND NOTES ON SOME OTHER SPECIES OF INSECTIVOROUS BATS FROM PERSIA,—by G. E. DOBSON, B. A., M. B., *Asst. Surgeon, H. M.'s British Forces.*

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Genus—TRIÆNOPS, Dobson (*gen. nov.*).

Nose-leaf horse-shoe shaped in front, tridentate behind; horse-shoe shaped portion consisting of two laminae, of which the overlying one is deeply emarginate in front, with the sides of the emargination turned upwards and supporting the base of a longitudinal, horizontal crest ending above and between the nasal orifices; hinder, erect portion of the nose-leaf with one cell in the centre of its base, the entrance to which is guarded by a lanceolate process of membrane, with cells on the sides of its front surface, and one on each side behind, immediately above the eye.

Dentition:—i. $\frac{2}{4}$; c. $\frac{1-1}{1-1}$; pm. $\frac{2-2}{2-2}$; m. $\frac{3-3}{3-3}$.

First upper premolar minute, placed *outside* the line of teeth.

The above characters of the new genus are derived from an examination of six spirit specimens of a new species of bat from Persia, which I now proceed to name and describe in detail.

TRIÆNOPS PERSICUS, Dobson, Pl. XXVIII.

Head long; muzzle broad, obtuse, flattened laterally, lower lip with four small warts on its anterior margin; ears nearly as broad as long, funnel-shaped, with acutely pointed tips; the outer margin commences in a narrow fold of skin arising from the posterior corner of the eyelids, which passing backwards and slightly downwards for about 0.1 in. rises abruptly to a height of 0.2 in. forming the outer side of the ear; the inner margin is convex forwards, and rises to about the same height; at a short distance behind, it is interrupted by a sudden emargination which is succeeded by a triangular elevation of the rim of the ear forming the tip which projects outwards owing to the concavity of the outer side of this

triangle. The form of the ear, which is difficult to describe, is very well given in the plate accompanying this paper.

The nasal appendages are very complicated; the anterior portion of the nose-leaf is horse-shoe shaped, consisting of two laminae, the upper overlying lamina deeply emarginate in front, the opposite sides of the emargination turned upwards and supporting the anterior portion of a broad, flat, longitudinal crest which ends in a triangular head above and between the nasal orifices; these openings are placed at the bottom of a considerable depression, are about .05 in. apart, and between them a very narrow *raphé* connects the apex of the triangular termination of the central, horizontal, longitudinal crest with the base of the hinder erect nose-leaf; this hinder portion arises from a thick root behind the nostrils, its base is hollow, containing a single cell, the entrance to which is guarded by a lanceolate process of membrane; above this opening, the nose-leaf terminates by forming three projections of which the central is needle-shaped, very slightly longer than the others, and its base forms the upper boundary of the entrance to the central cell; the lateral projections are shaped differently, rising on either side of the base of the central projections by narrow pedicels they soon become expanded by the increasing convexity of their outer sides, which converging above form with the inner margins acute terminations.

On each side of the hinder nose-leaf are six cells, of which one is situated behind immediately above the eye occupying the position of the minute pores observed in nearly all the species of Dr. J. E. Gray's second group of *Rhinolophidæ*; in front of the eye two shallow, but well defined, cells are formed by the folds of membrane external to the horse-shoe, of which that nearest the eye has for its posterior wall the raised margin of the eyelid; this cell, like that above the eye, is concealed by the hair of the face, and is not shown in the accompanying illustration of the animal's head.

The total number of cells is therefore thirteen, of which three on each side are formed by the erect nose-leaf, and one occupies the centre of its base.

The entrance to this central cell appears to be normally closed, at least so it is in all the spirit specimens, but may be readily

opened by drawing the lower lanceolate process of membrane forwards and the upper central projection backwards. A small, quadrilateral opening is thus disclosed, having for its lower and upper boundaries the bases of these projections. Through this opening the animal has probably the power of admitting air at will to the central cell which is spacious and most likely acts as an accessory nasal cavity, to the sides of which part of the terminations of the olfactory nerves may be distributed. The form of the lower lanceolate process of the nose-leaf which is laterally flattened in front of the opening to the cell, favours this supposition.

The wings present some remarkable peculiarities of structure. From the outer side of the proximal extremity of the terminal phalanx of the third finger a small process of bone arises with an inclination forwards, and terminates by an obtuse point in the wing membrane in which it is included. The distal extremity of the same phalanx is very shortly bifid as in most *Rhinolophine* bats, but the terminal phalanx of the fourth finger ends in a single point.

Wing membrane attached to the tibia a short distance above the ankle; feet long, slender; toes armed with long and strong claws; tail included in the interfemoral membrane, the extreme tip alone free.

On the upper surface the fur is very pale buff, almost white, with light sepia tips, darkest on the back of the neck, along the anterior margin of the scapulæ, and between the shoulders; towards the root of the tail of a yellowish tinge throughout; beneath, wholly very pale buff or dirty yellowish-white, cutaneous system of the same colour. The fur is everywhere long and dense; in front it covers the posterior surface of the hinder nose-leaf, exceeding in length the height of the trident-shaped crest; the inner edge of the ear, as far as the emargination, is clothed anteriorly with long hairs which also occupy the interior of the conch, but are finer, and more thinly spread in the latter situation; behind, the fur of the back extends on to the base of the interfemoral membrane nearly as far as the end of the second caudal vertebra; on the wing membrane its extent is very limited; beneath, the wing membrane is covered with hair nearly as far as a line drawn

from the middle of the humerus to the middle of the femur, but the humerus and femur are completely naked beyond the body; the distribution of fur on the under surface of the interfemoral membrane is similar to that above.

Dentition:—i. $\frac{2}{4}$; c. $\frac{1-1}{1-1}$; pm. $\frac{2-2}{2-2}$; m. $\frac{3-3}{3-3}$.

The anterior upper premolar is minute with a flattened crown, and is placed *outside* the line of teeth; the upper and lower incisors are bilobed; the upper canines have large cusps at their bases posteriorly.

	Inches.
Length, head and body,	2.25
„ tail,.....	1.2
„ head,	0.85
„ ear (anteriorly),	0.45
„ „ (posteriorly),	0.35
Breadth,	0.4
Length, forearm,.....	2.0
„ thumb,	0.28
„ second finger,	2.8
„ fourth do.	2.0
„ tibia,	0.65
„ foot and claws,	0.35
„ calcaneum,	0.45
Expanse,	10.50

The characters of the nasal appendages would be sufficient, according to Dr. J. E. Gray's system of classifying the genera of *Rhinolophidæ** to require the formation of a new group for the reception of the genus, based on this species, which would thus take its position next the *Rhinolophina*:—

- I. *Rhinolophina*.
- II. *Triænopina*.
- III. *Phyllorhinina*.
- IV. *Rhinopomina*.
- V. *Nycterina*.

The characters of the group are those of the genus as given in the commencement of this paper, and in the absence of other genera must necessarily remain so without modification.

* Proc. Zool. Soc. 1866.

In a future paper on the osteology of the type species I hope to be able to show that, apart from the characters presented by the nasal appendages, there are points of difference in the construction of the bony skeleton which still further separate this genus from all other genera of *Rhinolophidæ*.

The specimens from which the description of *Trienops persicus* is derived, were obtained at an elevation of about 4750 feet near Shiraz in Persia; at the same place specimens of four other species were also taken, of which one is new, belonging to the sub-genus *Vesperus*,* *Keys. et Blas.*

VESPERUS SHIRAZIENSIS, Dobson.

Muzzle broad and thick; head flat; nostrils opening sublaterally with a shallow emargination between; ears triangular with rounded tips, inner margin convex, outer margin faintly hollowed out beneath the tip, becoming slightly convex below, again hollowed out opposite the base of the tragus, and terminating towards the angle of the mouth in a small lobe; tragus long, rounded at the tip, with a very slight inward curvature, inner margin almost straight, outer margin slightly convex with a small triangular lobe at the base.

Wings broad; wing membrane attached to base of outer toe; terminal phalanx of thumb nearly twice the length of basal; feet moderately long, slender; toes more than half the length of the whole foot.

The fur of the back is moderately long, and scarcely extends on to the wing membrane except in the immediate neighbourhood of the sides of the body, and on the interfemoral membrane at the root of the tail; beneath, the wing membrane is covered to a greater extent, and fine thinly spread hairs pass out along the posterior margin of the humerus and forearm to the carpus; the fur of the abdomen scarcely extends to the interfemoral membrane, but very fine, almost invisible, hairs rise from the transverse dotted lines with which it is marked. The fur of the head passes forwards upon the face slightly in front of the eyes, the remaining

* "*Pipistrellus*" in the abstract of this paper in Proc. As. Soc. Bengal, June, 1871.

portions of the face are almost naked; the ears are covered posteriorly with fur at their bases which also extends upwards in a triangular form on the inner side, anteriorly the inner margin and part of the conch are clothed with a few short hairs.

Above, dirty brownish buff; beneath, a lighter shade of the same colour.

Dentition:—i. $\frac{2}{6}$; c. $\frac{1-1}{1-1}$; pm. $\frac{1-1}{2-2}$; m. $\frac{3-3}{3-3}$.

Outer incisors very small, and close to inner ones which are nearly three times their length, and obtusely pointed.

This bat is about the size of *Vespertilio murinus* of Europe; it approaches the *Serotine* very closely in some particulars, as in dentition and length of body and tail, but differs in the much greater length of the forearm, in the form of the ear and tragus, and notably in the colour of the fur.

	Inches.
Length, head and body,.....	2·8
„ tail,.....	2·0
„ head,	1·0
„ ear,.....	0·85
Breadth, do.	0·5
Length, tragus,	0·35
Breadth, do.	0·1
Length, forearm,	2·2
„ second finger,	4·1
„ fourth do.	3·0
„ thumb,	0·38
„ tibia,	1·0
„ foot and claws,.....	0·5
Expanse,	15·0

The remaining three species obtained near Shiraz were:—

PIPISTRELLUS MARGINATUS.

Vespertilio marginatus, Cretschmer.

A dried specimen agreeing very well with the description in Temminck's *Monograph*.* The white margin to the wings and interfemoral membranes is very well marked. On the upper surface the fur of the body extends upon the wing membrane as far as a line drawn from the middle of the humerus to the knee joint;

* *Monographies de Mammalogie*, vol. ii, p. 202.

posteriorly, it covers more than one-third of the interfemoral membrane; beneath, it extends to the elbow, but does not occupy so much of the interfemoral membrane which is covered for nearly half its surface with a very few short hairs arising from the transverse dotted lines. Above, black for three-fourths its length, the remaining portion to the tip light yellowish brown or dun colour; beneath, black for the same extent, the ends of the hairs paler than above, becoming white on the belly and pubes.

Inner incisors long and acutely pointed, outer ones short and close to their bases; anterior upper premolars very minute, concealed between the canine and second premolar, and not visible without the aid of a lens.

PIPISTRELLUS COROMANDELICUS.

Vespertilio Coromandelicus, F. Cuvier.

Several spirit specimens of immature individuals referable to this species.

VESPERTILIO MURINUS, Geoff.

A well preserved dried specimen answering in all respects to the description given in Temminck's Monograph;* above, white with a reddish tinge, beneath pure white; base of the hairs, above and beneath, dusky.

LIST OF ALGÆ COLLECTED BY MR. S. KURZ IN BURMA AND
ADJACENT ISLANDS,—by DR. G. V. MARTENS, in *Stuttgart*.
Communicated by MR. S. KURZ.†

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I.—PALMELLACEÆ.

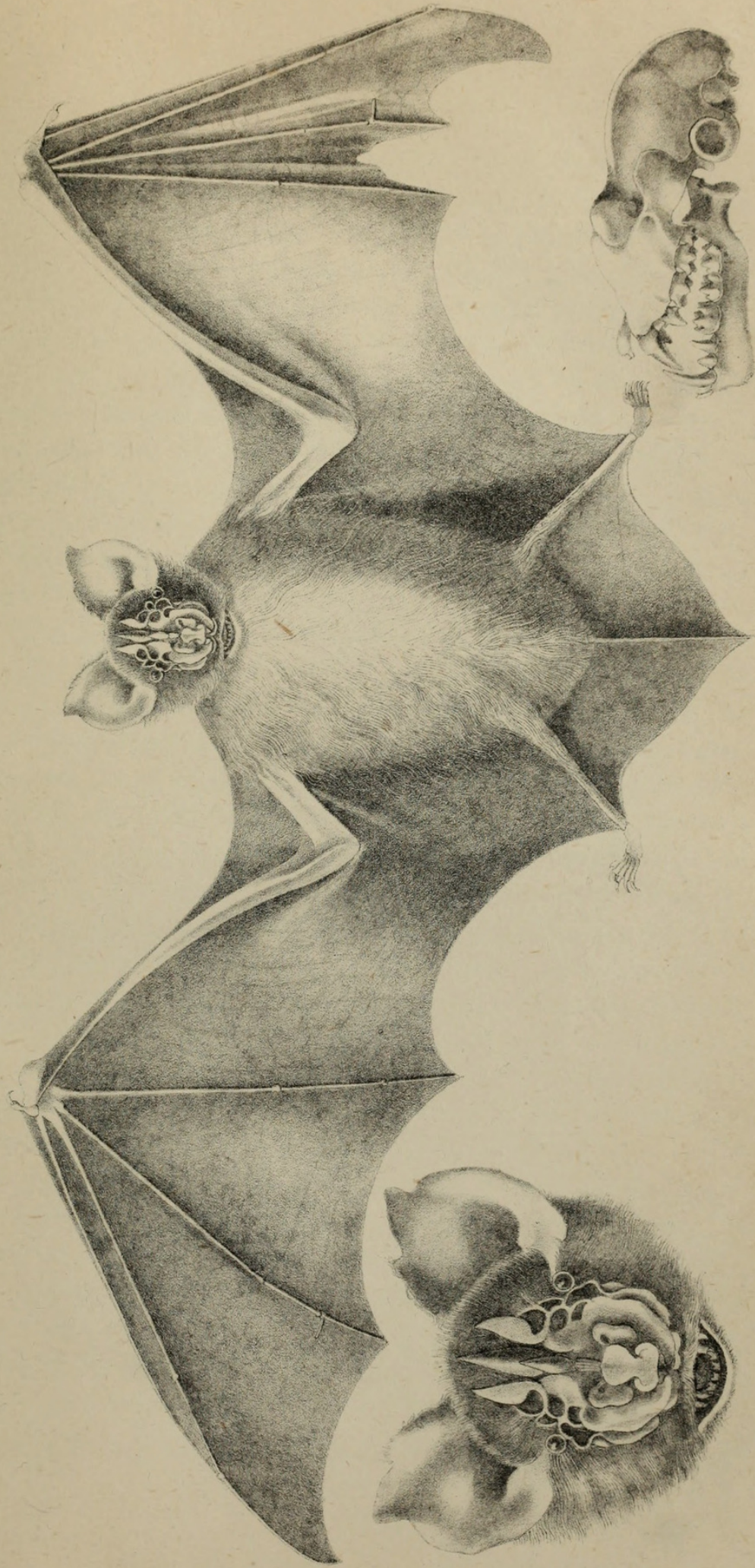
PALMELLEÆ.

MICROCYSTIS, Kg.

[1. *M. aeruginosa*, Kg.—In a pool of sweet water in Kolodyne valley, Arracan. Octob.].—S. K.

* Vol. ii, p. 178.

† I have arranged the numerous determinations of Burmese Algæ, lately transmitted to me by Dr. v. Martens, according to that author's "Tage der Preussischen Expedition nach Ost-Asien." For any defects in the arrangement of this List, as well as for a few additional species entered between



Triazops Persicus.



Dobson, G. E. 1871. "On a new genus and species of Rhinolophidæ, with description of a new species of Vesperus, and notes on some other species of insectivorous bats from Persia." *The journal of the Asiatic Society of Bengal* 40, 455–461.

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