

The remarks quoted below also coincide with the statement of Mitchell—"takes the hook, if baited with dough, when let down through holes in the ice, at mid-winter."

"This fish, so far as I am acquainted with it, frequents swift, clear and deep water, often rising to the surface to catch grasshoppers, toads that have fallen in the water, &c. This fish takes the bait more vigorously in cold than warmer weather. The young are found, during the latter part of summer, in very shallow water, generally frequenting stony banks; at this time they are exceedingly shy, and refuse a sinking bait, but would probably take the fly of the trout-fisher. This fish is more numerous in the contiguous streams than in the Delaware."—*J. Walter Vroom.*

Note on HYPOGNATHUS NITIDUS, Gir.

This species proves very abundant in many of the streams in the neighborhood of Trenton, N. J. It in no manner differs from specimens taken from Lake Champlain, the original locality. We suspect this to be the southernmost extent of its geographical distribution, as the author has seen undoubted specimens of *H. regius*, Gir., taken in the Delaware, nineteen miles below Trenton.

It is generally found associated with *Semotilus atromaculatus* and *Luxilus Americanus*, though it sometimes appears to be the sole representative of the Cyprinoids in many streams of considerable extent, as indeed do both of the other mentioned species. Its preference is decidedly for rapid water, as far as we have observed, which is the case with the former, but not with the latter of the two above-mentioned species.

Descriptions of new PTEROPINE BATS from Africa.

BY HARRISON ALLEN, M. D.

HYPSIGNATHUS, n. g.—Head large, massive. Face greatly developed, anterior portion humped. Nose very high, blunt, corrugated. Nostrils produced; opening laterally; bounded internally and inferiorly by a projection of the coriaceous membrane, which by its continuation externally forms a lateral fold. This expansion, after descending from the posterior part of the nostril to the lip, runs along the line of the upper jaw, forming the outer wall of a distinct groove, the inner wall of which is made by the true lip. Just as this remarkable membrane turns down from the anterior nares, it also extends forward, clearly defining the boundaries of the snout. From the lower anterior part of each nostril a leathery ridge extends to the mouth. These divide the muzzle into three distinct sulci. The chin is peltated, and indistinctly divided into halves by a mesial line. Ears small, naked, without tragus and tufted at base. Wings thrown very far back. Basal joint of thumb small. Index finger clawed. Interfemoral membrane small, ecaudate. Lower incisors closing anterior to the upper.

3 1 4 1 3

Dental Formula, m —, c —, i —, c —, m — = 28.

5 1 4 1 5

Skull remarkably high. Nose broad at summit, occasioned by the development of the nasal bones. Extending from the canines to near the top of the face is an irregular ridge for the insertion of the curious nasal membrane already noticed. The infra-orbital foramen opens posteriorly to the entire dental series. The skull is broader between the eyes than in other Pteropines. Post-orbital processes stout, short and pointed outwards and backwards. Cranium small, comprising but a third of the entire head. A parietal crest is present for about two-thirds its length, when it abruptly terminates at the apex of a small triangle which is formed by the want of approximation of the hinder

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portion of the temporal fossæ. Occipital ridge well marked and leaning backwards. Foramen magnum orbicular. Palatal bones united with the deeply arched mouth by a greater angle than that of *Pteropus*. The foramen incisivum is cordate.

The lower jaw is flattened and irregular, depressed at symphysis. The two halves unite at a less acute angle than in *Pteropus*. The coronoid process is low, and the angle which it forms with the alveolar ridge is so slight that the distance from the top of the process to the last molar is equal to one-half the distance from the same point to the small pre-molar. The condyloid process is about one-half the distance between the base of the jaw and the top of the coronoid.

The superior incisors are small unicuspid, regular and separated from one another. The distance between the canines and the laterals is greater than the distance from one incisor to another. The canines are slender, convex anteriorly, point slightly backward, and, when the jaws are closed, nearly touch the plane on which the skull rests. The first molar is pointed; the second and third are much alike, the posterior being smaller and less trenchant, the external cusp being the larger.

The inferior incisors are small, separated, the space between the centrals exceeding that between the laterals. The canines are smaller and blunter than those above, and lean strongly backwards. The premolar, which is absent above, is here present; it is very minute, shaped, like an incisor, is nearer the canine than the second molar, is directed backward and outward, and, when the jaws are closed, is observed to be placed anterior to the superior cuspidatus. The first and second molars assume the carnivorous type; the second has two cusps divided as usual by a longitudinal groove; the third and fourth have their cusps much worn, the latter being little more than flattened tubercles.

As mentioned above, the articulation is curious; the inferior incisors close in front of the superior, so as to completely hide them.

H. MONSTROSUS, n. s.—Fur fine and short, very thin upon the face, interspersed with a few long stiff hairs. A well-marked white line extends from the facial protuberance to between the eyes. Top of head and nucleal region light ash brown, dark in the centre, lighter upon the sides, and narrowing to a whitish band which encompasses the inferior part of the anterior surface of the neck. The hair between this band and the chin is very thin and scattering, and of a pale brown. Dorsum delicate plumbeous tipped with grey, thicker above than below. The fur runs to a purer brown upon the posterior part of interfemoral membranes and thighs. The fore extremities to near the carpal joint are clothed with a thin coating of fur, while the interbrachial surface and that contained between the fourth finger and the sides of the body are studded in different directions with interrupted lines of minute hairs. The pectoral region and sides of belly of the prevailing hue—plumbeous grey—with a tendency of that in the centre of the abdomen to become whitish. Pubic region brownish. At the point of junction of the interbrachial membrane with the body a row of white hair is seen. The membranes beneath have upon them the same thin lightish hairs as above, but more extensive.

The dimensions of the skull are as follows :

Length from occiput to extremity of nose.....	2.9 in.
“ of cranium.....	1.0
“ “ nose.....	1.6
Height of nose.....	0.9
Breadth of nasal bones.....	0.3½
“ palate between canines.....	0.6
“ “ “ molars.....	0.9
Distance between zygomas.....	1.6

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Length of lower jaw.....	2.3 in.
Breadth of symphysis.....	0.6
Distance between condyles.....	1.3
Height of coronoids.....	0.9
Distance between first premolar and canine.....	0.2
Dimensions of the body :	
From snout to interfemoral membrane.....	12.0
“ “ ears.....	3.4
“ “ eyes.....	2.0
“ anterior part of eyes to ears.....	1.4
Length of mouth.....	1.4
Breadth of snout..	1.4
Height of snout.....	0.8
“ face.....	1.1
Breadth of chin.....	0.9
Length “.....	0.4½
Breadth between eyes.....	1.3
“ “ ears.....	1.6
Distance from snout to wing membrane.....	5.7
Length of ulna.....	4.6
“ thumb.....	2.0
“ first joint.....	0.9
“ second joint.....	1.3
“ index finger.....	3.9
“ third “.....	9.6
“ fourth “.....	7.1
“ fifth “.....	6.6
“ inferior extremity.....	3.6
“ tibia.....	2.1
“ foot and claws.....	1.3
Expanse of wing membranes.....	27.0

Hab.—Western Africa. Discovered by M. Duchailu.

EPOMOPHORUS COMPTUS, n. s.—Hair soft; thick above, thinner below. Color on the back a delicate reddish fawn, becoming darker on the loins and base of arms. Under surface with a large ovoid patch of dirty white, bounded laterally by longitudinal fawn colored stripes. Face covered with short brown hairs. Small yellow tufts at base of ears. Chin whitish. Epaulettes faintly marked. Lips moderate.

3 1 2 1 3

Dental formula, m —, c —, i —, c —, m — = 26.

5 1 4 1 5

The fur of this bat differs from that of any other of the genus to which it belongs in not being unicolored. That upon the back of the neck and shoulders possesses three well-defined hues—the base is of a dark brown, the middle of a paler hue, while the tip forms a delicate reddish brown. This, however, can only be seen where the hair is thickest. Lower down upon the back and on the belly the entire length of each individual hair is of one color. Everywhere the hair covering is soft and yielding. All that space beginning between the eyes and terminating at the middle of the back is of thick, fine, beautiful hair. The sides are much thinner and darker; they form a continuous line with that of the ulna, where it extends down upon the wing membrane some little distance. The continuation of the dorsal fur forms on the ventral surface of the interfemoral membrane a sparsely furnished patch, which goes to make the lower portion of the lateral fawn-colored bands. These latter are narrow inferiorly, wider superiorly, where they terminate gradually in the lighter hue of the cervical region. From the external side a prolongation is sent up along the line of the humerus and ulna to within an inch of the carpal joint; both

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above and below this line the membrane has upon it several points of short lanuginous hairs of a whitish color.

The customary clumps of hair at the base of the ears are present. The anterior spot is larger than the posterior.

The characteristic shoulder tufts are by no means conspicuous; they are composed of thin long hairs of a light color. The centres are quite naked and placed more upon the neck than is usual.

The skull is smaller than that of *E. gambianus* Ogil. The post-orbital processes are small but well defined; temporal fossæ not approximate. The intermaxillaries slight, terminating in a point, not abruptly, as in *E. gambianus*, and supports but two incisors. The latter occupy the centre of the inter-canine space, and are slightly separated from one another.*

The other teeth differ in no particular from those of *E. gambianus* except in their mode of articulation, in which the inferior incisors close in front to the superior, as already seen in *Hypsignathus*, the superior teeth, however, are not entirely hidden.

This species holds a position between *E. gambianus* Ogil. and *E. shoensis* Rüpp. It differs from the former in the relative length of the nose, in the tricolored hair of back, and in the greater extent of the epigastric patch; from the latter in being much larger, and in the absence of the dark colored abdomen.

Dimensions.

Length of head and body.....	6·0
“ from snout to base of ears.....	1·6
“ “ eye to snout.....	0·8
“ “ anterior part of eye to ear.....	0·8
Height of ears.....	0·9
Breadth of ears.....	0·6
Length from nose to wing membrane.....	2·8
“ of forearm.....	3·0
“ longest finger.....	6·0
“ fourth “.....	4·8
“ thumb and claws.....	1·2
“ basal joint.....	0·3
“ second joint.....	0·8
“ tibia.....	1·6
“ foot and claws.....	0·8
Expanse of wing membrane.....	18·0

Hab.—Western Africa; discovered by M. DuChaillu.

PTEROPUS MOLLIPILUSUS, n. s.—Head small; ears large. Envergure great. Interfemoral membrane scanty. Tail very small, free. General hue olive brown; brighter upon the back of the neck, where a faint dusky-brown line is seen traversing the thick fur of this region. Antero-posteriorly a patch of the same hue lies upon each shoulder; that upon the back is thinner and darker. The interfemoral membrane is well furnished with soft olive brown hair, which becomes more scanty and shorter as it runs down the legs and the back of the feet to the claws. Back of the humerus and ulna thinly covered with the hair of the prevailing hue; anterior part of neck russet; belly of the same prevailing color as the back, with an inclination to dusky red upon the thighs.

* This disposition of the superior incisors is peculiar. We know that these teeth frequently vary; as, for instance, in the genus *Hypoderma*, where the young animal has
 $\begin{matrix} 4 & & 2 & & 2 \\ i & - & \text{and later in life} & - & \\ 4 & & 2 & & 0 \end{matrix}$
 the elderly animal possessing but -. Thus, the difference in the number of the incisors is not of the importance which might at first sight be supposed. It is interesting, however, to know that this is the only instance of incisorial variation as yet seen among the species of *Epomophorus*.

Fine straggling hairs clothe the inferior surface of the ulna and humerus, and stretch out upon the membrane down along the sides of the body and upwards upon the interbrachial membrane. Everywhere the hair is very soft.

The skull is of medium size, not crested. The postorbital processes are long and incline outward and downward to within two lines of the zygomas. The intermaxillary bone is not thrown forward and downward as in other Pteropi, but is on the same level as the roof of the mouth. The first premolar above is larger than the incisors. The same tooth on the lower jaw is also of good size, but less tubercular than in other species.

The dimensions are as follows :

Length from nose to base of tail.....	8.0
“ “ “ commencement of membrane.....	3.0
“ of head.....	2.3
“ from nose to eye.....	1.0
“ “ eye to ears.....	0.6
Between eyes.....	0.9
“ ears.....	1.3
Height of ears.....	0.10
Length of tail.....	0.3
“ superior extremity.....	6.6
“ thumb.....	1.7 $\frac{1}{2}$
“ first joint.....	0.4 $\frac{1}{2}$
“ second joint.....	1.3
“ index finger.....	3.0
“ third “.....	8.0
“ fourth “.....	6.5
“ fifth “.....	5.0
Envergure.....	26.0

It will be observed that the length of the inferior extremity and the expanse of wing membrane are greater than usual, when the other proportions are taken into consideration.

Hab.—Western Africa; discovered by M. Duchailu.

Descriptions of certain Species of DIURNAL LEPIDOPTERA, found within the limits of the United States and of British America.

BY WM. H. EDWARDS.

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| 1. <i>Melitæa mylitta</i> , nov. sp. | 6. <i>Cœnonympha inornata</i> , nov. sp. |
| 2. “ <i>minuta</i> , nov. sp. | 7. “ <i>ochracea</i> , nov. sp. |
| 3. “ <i>nycteis</i> , Doubleday. | 8. <i>Lycæna Anna</i> , nov. sp. |
| 4. <i>Limenitis Weidemeyerii</i> , nov. sp. | 9. “ <i>Scudderii</i> , nov. sp. |
| 5. <i>Satyris Silvestris</i> , nov. sp. | 10. “ <i>fuliginosa</i> , nov. sp. |

MELITÆA MYLITTA, nov. sp. Expands 1.2 inch.

Male.—Upper side fulvous; fringe of primaries alternately black and white, of secondaries white; on hind margin of primaries a broad black border, in which is a series of fulvous lunules, the middle one largest and projecting, preceded by a sinuous row of round fulvous spots which increase in size towards the inner margin; next, a fulvous band, the upper half of which intersects the preceding row at the fifth spot, making it appear bifid on the costal margin; this band is edged anteriorly by a black line which is dilated on costal and on inner margin; on the discal are a fulvous streak entirely edged with black; base of both wings covered by wavy confluent black lines, as in *Tharos*.

Secondaries have a narrow black marginal border, on the anterior edge of which is a row of fulvous lunules, the one next the anal angle bisected longi-

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Allen, Harrison. 1861. "Description of new pteropine bats from Africa."
Proceedings of the Academy of Natural Sciences of Philadelphia 1861, 156–160.

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