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III. *The distinctive Characters of two British Species of Plecotus, supposed to have been confounded under the Name of Long-eared Bat. By the Rev. Leonard Jenyns, M.A. F.L.S. Communicated by the Zoological Club of the Linnean Society.*

*Read March 4, 1828.*

THE subgenus *Plecotus*, originally instituted by Geoffroy for the reception of the *Vespertilio auritus* and the *V. barbastellus* of Linnæus and Gmelin, has not, that I am aware, met with any Europæan additions from the discoveries of later times. I am on this account desirous of drawing the attention of naturalists to a third British species referable to this group, which may be considered either as entirely new, or at least one which has never been clearly distinguished from the former of the two above mentioned. I am the more anxious to do this, from a strong persuasion that the smaller species of the *Vespertilionidæ* still require much investigation, and that even in our own island many others, besides those recorded, remain to be ascertained.

This Bat, of which I have never met with more than one specimen, was discovered some years back, in the month of July, by Professor Henslow and myself, adhering to the bark of an old pollard willow, on the edge of Grunty Fen, in the Isle of Ely. It is a female; and, in a general point of view, so nearly resembles the *Common Long-eared Bat* of English authors, that the two might be easily confounded; nor, indeed, did I myself conceive it to be anything more than a young individual of that species



species during a long space of time that it remained by me preserved in spirits. It was not till very lately, when I was induced to give the matter a more close examination, that I discovered a well-marked difference between them, and such as, in my opinion, could hardly be looked upon as the result of immaturity alone. This difference, which resides for the most part in the colour and in the *relative* no less than in the *absolute* dimensions of the several parts, I shall now endeavour to point out; affixing, in the first instance, such characters to each species respectively, as may best serve to discriminate it from the other. Reserving the established name of *auritus* for the larger and more common sort, I propose to distinguish the new species by that of *brevimanus*, in respect of one of its leading peculiarities, to be hereafter noticed.

PLECOTUS. Geoff., Desm.

1. *P. auritus*. Greater or Common Long-eared Bat.

*P. vellere fusco-griseo, subtùs aliquantò pallidiori; auriculis oblongis, capite plus duplò longioribus; trago ovato-lanceolato; caudâ elongatâ, antibrachium longitudine superanti, apice obtusiusculo.*

TAB. I. Fig. 1.

*Vespertilio auritus.* Geoff. *Ann. Mus. d'Hist. Nat.* tom. viii. p. 197. sp. 7. Desm. *Nouv. Diction. d'Hist. Nat.* 2de edit. tom. xxxv. p. 478. *Mammal. (Encycl. Method.)* p. 144. sp. 223.

*Dimensions.*



*Dimensions* \*.

	Inches.	Lines.
Length of the head and body, from the nose to the root of the tail . . . . .	1	10
—— of the head . . . . .	0	8
—— of the tail . . . . .	1	8
—— of the auricle . . . . .	1	5
Breadth of the auricle . . . . .	0	9
Length of the tragus . . . . .	0	7
Breadth of the tragus . . . . .	0	2 $\frac{1}{2}$
Length of the arm . . . . .	0	10
—— of the forearm . . . . .	1	5
—— of the thumb . . . . .	0	2 $\frac{3}{4}$
—— of the phalanges of the middle finger, or the distance from the carpus to the apex of the wing . . . . .	2	6
—— of the thigh . . . . .	0	6
—— of the shank . . . . .	0	8
Exsertion of the tail beyond the interfemoral membrane . . . . .	0	0 $\frac{3}{4}$
Expansion of the flying membrane . . . . .	10	2

2. *P. brevimanus*. Lesser Long-eared Bat.

*P. vellere* suprà rufo-fusco, subtùs albescente ;  
auriculis oblongis, capite haud duplò longi-  
oribus ; trago ovato-lanceolato ; caudâ anti-  
brachium longitudine æquanti, apice acuto.

TAB. I. Fig. 2.

\* These dimensions are taken from a *female* specimen, with the view of forming a more just comparison between this and the following species. The *males* are in general a trifle larger.

*Dimensions*.



*Dimensions.*

	Inches.	Lines.
Length of the head and body, from the nose		
to the root of the tail . . . . .	1	6
——— of the head . . . . .	0	7
——— of the tail . . . . .	1	2
——— of the auricle . . . . .	1	0
Breadth of the auricle . . . . .	0	5
Length of the tragus . . . . .	0	5 $\frac{1}{2}$
Breadth of the tragus . . . . .	0	2
Length of the arm . . . . .	0	7 $\frac{1}{2}$
——— of the forearm . . . . .	1	2
——— of the thumb . . . . .	0	3
——— of the phalanges of the middle finger, or the distance from the carpus to the apex of the wing . . . . .	1	8
——— of the thigh . . . . .	0	5 $\frac{1}{2}$
——— of the shank . . . . .	0	5 $\frac{1}{2}$
Exsertion of the tail beyond the interfemoral membrane . . . . .	0	1
Expansion of the flying membrane . . . . .	6	6

I shall now detail more in particular some of the leading discrepancies between these two species, most of which are drawn from a comparative view of their respective dimensions as exhibited in the foregoing tables. It will be observed, in the first place, that in the *Plecotus auritus* the auricle is much larger in proportion to the body, and longer in proportion to the tragus, than in the *P. brevimanus*: and again, that in the former species the tail exceeds the forearm in length by three lines; whilst in the latter these parts are equal. There is nearly as great a difference with respect to the relative proportions of the femur and tibia, which are likewise of equal length in the *P. brevimanus*.



*manus*. On the other hand, in the *P. auritus* the thumb is somewhat shorter, and the tail not so much exerted from the interfemoral membrane; of which last part it may be also added, that in the *P. brevimanus* its extreme tip terminates in a fine point, whilst in the *P. auritus* it is somewhat obtuse and flattened. Another, and perhaps the most obvious distinction, resides in the expansion of the flying membrane, which, viewed *relatively* as well as *absolutely*, is by much the more considerable in the *P. auritus*. This circumstance arises from the greater development of the metacarpal bones and the phalanges of the fingers, as compared with the arm and forearm. In the *P. auritus*, the length of the middle finger, or the distance measured from the carpus to the apex of the wing, exceeds in length the arm and forearm together by three lines, and the forearm taken separately by more than an inch; whereas in the *P. brevimanus* the length of this part is *less* than that of the arm and forearm together, and only exceeds the forearm separately by six lines. It is with a view to this last peculiarity that I have selected the trivial name of this species. Lastly, I may remark, that in the *P. brevimanus* there is a shallow notch on each side of the interfemoral membrane, about half way between the heel and the extremity of the tail, which in the *P. auritus* is scarcely visible.

The above distinctions, many of which are founded upon a comparative view of the osteology of the two species, can scarcely be considered as the variations of a different age. Independently of them, however, these bats, when seen together, will not be easily confounded, from the great difference in their *absolute* size, and in the colour,—more especially of their *under* parts. In the *P. auritus*, the colour is brownish-grey mixed with dusky, and is nearly the same above and below, being in the last instance merely of a somewhat paler tint. In the *P. bre-*



*vimanus*, not only have the upper parts a reddish tinge, which in a slight degree pervades the ears, wings, and interfemoral membrane; but what is more striking, they present a marked contrast with those underneath, which approach to yellowish-white. Moreover, it is worthy of note, that in this last species the hair is everywhere of the same colour throughout its whole length, whereas in the former it is of *two* colours, being always blackish at the roots.

I have contented myself on this occasion with mentioning those particularities which offer points of difference between the two species. Such as are the same in each, including the general appearance of the head and face, the singular formation of the nostrils, the peculiar shape of the auricle, tragus, &c., which are noticed with much accuracy in the *Mammalogie* of Desmarest and by other authors, I have not judged it necessary to speak of.

It is perhaps somewhat hazardous to form any conjectures on the habits of an animal from the case of a single individual, or we might have inferred, from the situation in which the above specimen of the *P. brevimanus* was found, that its natural place of abode was in the open country, remote from the habitations of men, and that during the hours of repose it retired to the hollows of trees. In this respect it would differ widely from the *P. auritus*, which resides altogether in buildings, more particularly within the roofs of dwelling-houses, where they may often be observed assembled in clusters of twenty or thirty together in the angles formed by the meeting of the rafters.

This bat must certainly be rare in Cambridgeshire, from the circumstance of my never having seen a second specimen\*; but it may be common elsewhere, and, as I hinted at the beginning,

\* Last summer (1827) I had an opportunity of again searching the neighbourhood of the spot where I first discovered this bat, but met with no success.

possibly



possibly may have been confounded with the other species. This circumstance is indeed rendered the more probable from the fact that different authors, describing the *Long-eared Bat*, have assigned to it different dimensions. On the continent, the larger species appears to have been the one observed, of which very correct descriptions and measurements are given by Geoffroy in the *Annales du Muséum*, and by Desmarest in the *Nouveau Dictionnaire d'Histoire Naturelle*, and *Encyclopédie Méthodique*\*, as referred to in the synonyms above quoted; but of our English authors, some appear to have seen *one* and some the *other* species. Thus we find Donovan (*Brit. Quad. vol. i. pl. 44.*) asserts the *Long-eared Bat* to be "one of the largest species of the genus that inhabits England;" whilst Shaw (*Gen. Zool. vol. i. p. 123.*) observes, that it is smaller than the *short-eared* or common sort. This last opinion seems indeed to be the more prevalent of the two. Daines Barrington, Berkenhout, Pennant, and Bewick, all fix the length of this species at no more than one inch and three-quarters; to which the two last add, "extent of wing seven inches†." I may also observe, that the figure given by Fleming (*Philos. of Zool. pl. 1. fig. 1.*), though still incorrect with respect to some of the relative dimensions, yet on the whole more nearly approaches to my *P. brevimanus*.

The concise descriptions of Linnæus, Brisson, and other of

\* In this last work, Desmarest speaks of a small variety of the *Plecotus auritus*, found in Egypt, which would appear to border closely upon my new species, and may be the same with it; but from the very few particulars that are given respecting it, it is utterly impossible to decide with certainty upon this point.

† It is hardly possible that these measurements can be correct. If the *length* is meant to include that of the body and tail together, as would appear at least from Daines Barrington's account (*Miscellanies, p. 165.*), this bat must be very much smaller than even my *Plecotus brevimanus*, yet its extent of wing would be greater. If the length of the body *alone* is intended, it would nearly equal my *P. auritus*, while its extent of wing would be more than three inches less.



the older authors, to which no measurements are annexed, will apply equally to either species.

I cannot conclude this paper without expressing a hope, that it may at least induce others to make inquiry with respect to the bats found in their own neighbourhood. I strongly suspect, that even the two above described are not the only species of *Long-eared Bat* that are to be met with in this country. I well remember, that about five years since a bat of this kind was brought to me at Ely, which was taken in a bed-room, and which at the time I immediately referred to the *Vespertilio auritus* of Linnæus, not having then paid much attention to these animals: however, I am since convinced, from a memorandum I made respecting it, that it must have been a much larger species than either of the above two, and in point of size more nearly approaching to the *Vespertilio Noctula*. Possibly this may have been the *var. β.* of Desmarest, or the *Big-eared Bat* described by Rafinesque under the name of *Vespertilio megalotis*\*. This, however, cannot now be determined, as the specimen was not preserved. I only mention the circumstance to show that the history of these animals, so far at least as relates to our British species, is still imperfect, and to invite naturalists to a further investigation of the subject.

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#### EXPLANATION OF TAB. I.

Fig. 1. A portion of the *Plecotus auritus*, exhibiting a comparative view of the anterior and posterior extremities, the tail, and interfemoral membrane.

2. *Plecotus brevimanus*, of the natural size.

\* See Desmar. *Mammal.* p. 133 (*note*).





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