

## Identification of British Bats

### First impressions

The usual method for identifying a mystery bat is to use a process of elimination. By asking yourself questions about the bat in front of you species can be quickly eliminated often leaving only two or three alternatives. There are several published dichotomous keys to help with this process (see references)

### Does it have a complicated nose leaf or a simple muzzle?

This will immediately identify a horseshoe bat leaving only the forearm length to separate the species.

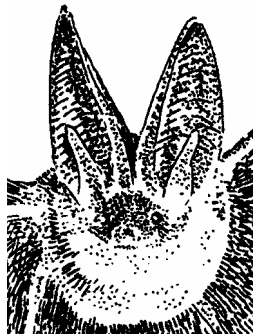
### Are the ears joined over the head or are they separate?

If the ears are joined then only three species are possible; brown long-eared, grey long-eared or Barbastelle.

Ears separate



Ears joined

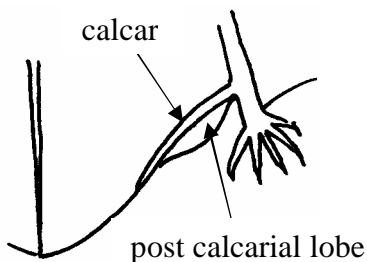


### How big is the bat?

For a beginner this may not be an easy question to answer but with experience many species can be eliminated on size alone. Forearm length is the most useful gauge as to a bats size. Weight is of little use as this can vary drastically over a short period. Forearm length can also be used on dead bats where weight would be useless. The length of forearm will immediately separate the horseshoe bats and the greater mouse-eared bat.

### Does the bat have a post calcarial lobe?

This lobe of skin is found on several species (pipistrelles, noctule, Leisler's, serotine) but not on myotis bats



### What shape is the tragus?

The tragus size and shape is important for the separation of many species especially myotis bats.

Noctule/Leisler's



Pipistrelle

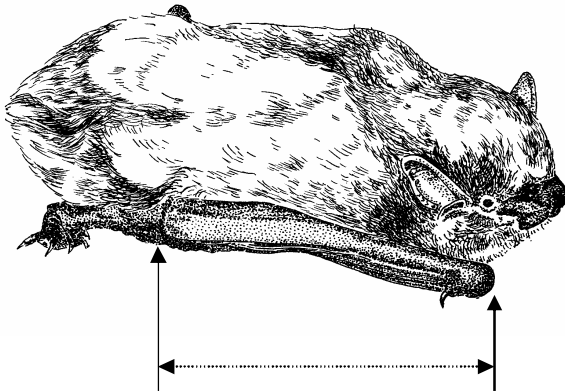


Myotis

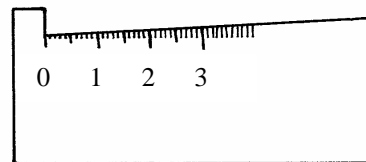


### Forearm length

The forearm should be measured from a folded wing (see below) from the elbow to wrist. Callipers are often shown to measure forearms but careful use is required to avoid injuring the bat. A far safer method is to use a wooden ruler with a notch cut at the start of the scale. It is not important for identification purposes to be more accurate than the nearest millimetre.

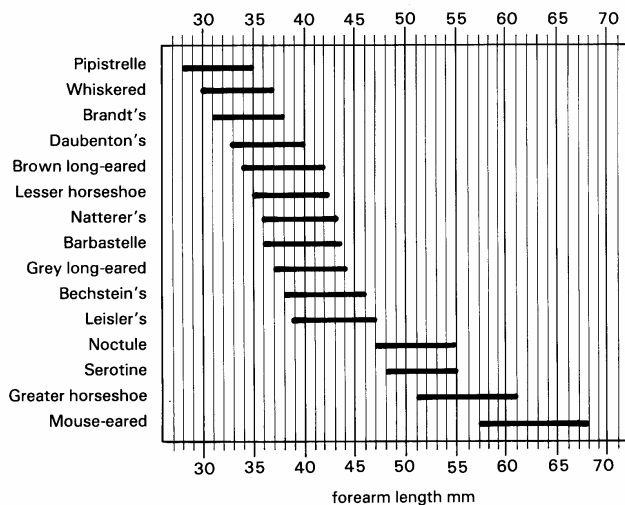


Measure between the elbow and wrist



Wooden ruler showing cut out notch

Forearm length: bars represent size range (from Stebbings 1986)



## Pipistrelle Bats

Key features:

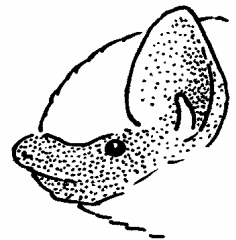
Small size  
Short, blunt ended, banana shaped tragus  
Underside fur is brown  
Post calcarial lobe present

Three species are found in Britain:

Common Pipistrelle (45kHz)	<i>Pipistrellus pipistrelles</i>
Soprano Pipistrelle (55kHz)	<i>Pipistrellus pygmaeus</i>
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>

### Common Pipistrelle

Forearm 28-35 mm  
Usually has dark brown fur which is almost black at its base, and a black nose and face giving it a masked appearance. Has a more pointed snout than soprano pipistrelle.



### Soprano Pipistrelle

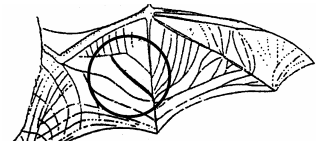
Forearm 28-35 mm  
Fur is usually lighter brown than common pipistrelle and is the same colour at the base. Face is pinkish and the snout is flatter in profile.



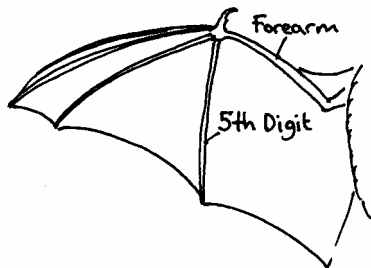
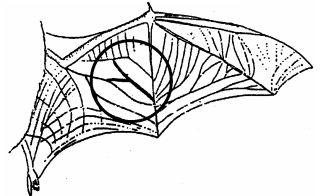
### Nathusius' Pipistrelle

Forearm 32-37 mm  
Dorsal fur is typically dark with lighter tips. The wing is broader than the other two pipistrelles. The fur is usually shaggier than common/soprano pipistrelle and there can be an obvious sharp dividing line between paler underside and darker dorsal fur. Fur on the underside of the wing can extend along the forearm to the wrist. There is an additional collagen band in the wing membrane (see opposite) not present in other pipistrelles.

Common/Soprano Pipistrelle



Nathusius' Pipistrelle



The length of the fifth digit (not including the wrist) is usually  $>1.25$  that of the forearm (in other British pipistrelle species it is less).

## Myotis Bats

This can be a very difficult group to separate. Careful attention to forearm length, tragus size and shape and calcar shape and size is important.

Key features:

Tapering tragus much longer than broad

No post calcarial lobe

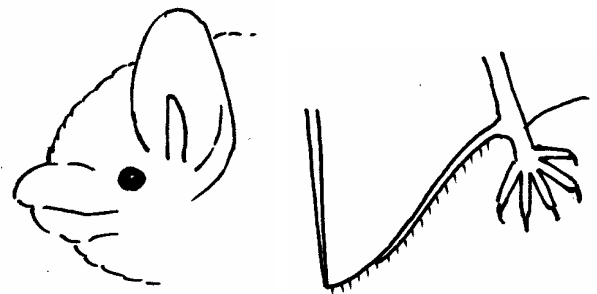
There are six species found in Britain

Daubenton's bat	<i>Myotis daubentonii</i>
Natterer's bat	<i>Myotis nattereri</i>
Brandt's bat	<i>Myotis brandtii</i>
Whiskered bat	<i>Myotis mystacinus</i>
Bechstein's bat	<i>Myotis bechsteinii</i>
Greater mouse-eared bat	<i>Myotis Myotis</i>

### Daubenton's bat

Forearm 33-40 mm

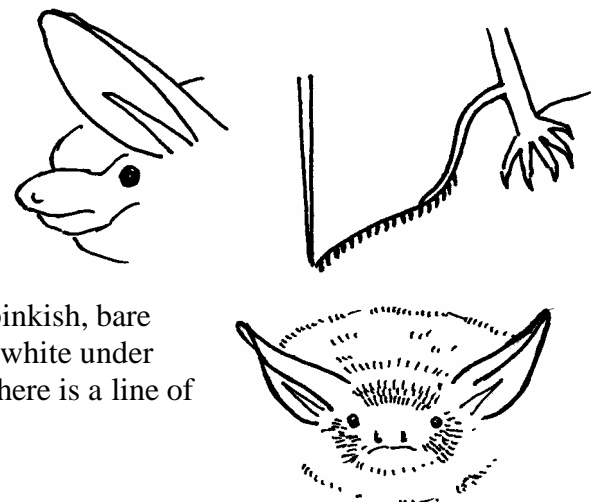
Medium sized species. Ears are relatively short and rounded with a blunt ended tragus. Tragus convex on outer edge. Face is blunt and pinkish with bare skin around eyes. Fur is sleek (velvety, mole like); colour of dorsal fur is a uniform brown, under fur dingy white. Feet are noticeably very large. Calcar extends more than halfway to the tail and is fringed with a line of fine hairs (not to be confused with the much stiffer bristles of Natterer's bat).



### Natterer's bat

Forearm 36-43 mm

Medium sized species. Ears are long and curved back at the tip. Ears appear splayed when viewed from the front. Ears are long enough to project beyond the nose. Tragus is long and pointed (half to two-thirds the length of ear, nearly four times as long as wide). Long face with pinkish, bare muzzle. Upper fur is long and grey/brown in colour. Very white under fur. Calcar is 'S' shaped and reaches halfway to the tail. There is a line of stiff bristles between the end of calcar and the tail.



## Whiskered/Brandt's bat

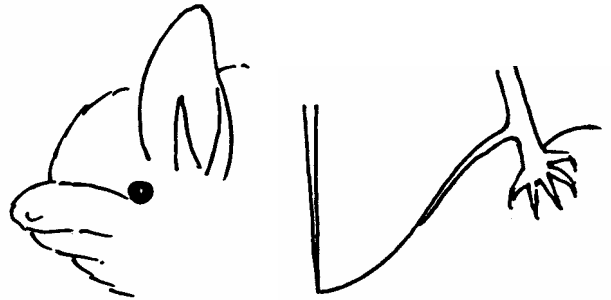
These small species' are very difficult to separate and close observation of several features are need to make a positive identification.

### Whiskered bat

Forearm: 30-37 mm

Ears longish, pointed and black (or very dark brown).

Tragus about half the length of the ear (about three times as long as wide). Outer edge of tragus is straight or slightly concave. Face is pointed, dark coloured and well furred. Upper fur is quite shaggy and dark coloured; pale tips, brown middle, black root. Under fur is dingy white. Calcar extends half way to the tail. Penis is slim and parallel sided.



### Brandt's bat

Forearm 31-38 mm

Ears shorter and more rounded than whiskered and lighter brown in colour.

Tragus usually is slightly concave on the outer edge. Face blunter than whiskered and dark brown. Upper fur dark brown, under fur dingy white/buff. Calcar as whiskered. Penis is bulbous,

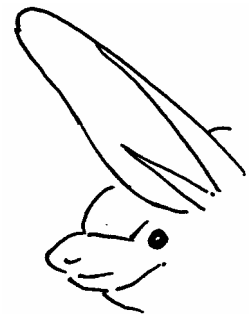


### Bechstein's bat

Rare and found only in south-east Wales and southern England as far east as Sussex and Surrey.

Forearm 38-46 mm

Ears very long (over 18 mm, Natterer's ear is less than 18 mm). Tragus long, straight and pointed (less than half the length of the ear). Face is pink and muzzle is quite long. Upper fur buff brown, under fur very white.



### Greater mouse-eared bat

Once considered extinct in Britain but one was found in a Sussex tunnel in January 2003 and again in January 2004.

Forearm 57-68 mm

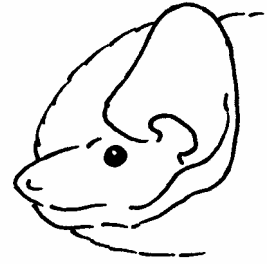
Can be separated from all other British bats on size alone. Ears fairly long. Tragus about three times as long as broad. Upper fur brown with pale under fur.

## Noctule, Leisler's and Serotine

Noctule                      *Nyctalus noctula*  
Leisler's bat                *Nyctalus leisleri*

### Key Features:

Mushroom shaped tragus.  
Squarish ear reaching down to the jaw line.  
Post calcarial lobe present.



Serotine                    *Eptesicus serotinus*

### Key Features:

Tragus blunt tipped (about four times longer than broad).  
Ears rounded, medium length.  
Long, narrow post calcarial lobe present.



## Noctule

Forearm 47-55 mm

Short dark ears (almost as broad as long) with a mushroom shaped tragus. Ears and muzzle are dark. Upper fur is sleek and a uniform golden brown colour (same colour at tip and base). Under fur similar to upper. Fur extends along the underside of the arm.

## Leisler' bat

Forearm 38-47 mm

Very similar to noctule but much smaller. The key difference is the fur colour. Leisler's fur is bicoloured with dark roots and a paler tip. Fur can appear to be very shaggy especially around the neck giving the appearance of a mane.

## Serotine

Forearm 48-55 mm

Ears longer than noctule or Leisler's bat obviously longer than broad. The banana shaped tragus is blunt tipped and about four times longer than broad. Upper fur is dark brown and may have paler tips. Under fur is slightly paler. Tail extends up to 6 mm beyond the tail membrane. Fur does not noticeably extend along the wing as in noctule and Leisler's.

## Long-eared Bats and Barbastelle

All three species in this group have ears that are joined over the head.

Barbastelle	<i>Barbastella barbastellus</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Grey long-eared bat	<i>Plecotus austriacus</i>

### Barbastelle

Forearm length 36-44 mm

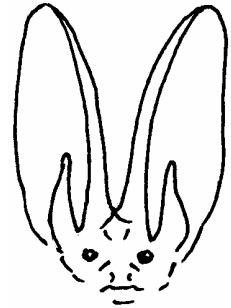
Large broad ears joined at the base giving the face a squarish appearance. Broad triangular tragus. Face short and pug-like. Fur dark brown/black with pale tips giving a frosted appearance.



### Brown long-eared

Forearm length 34-42 mm

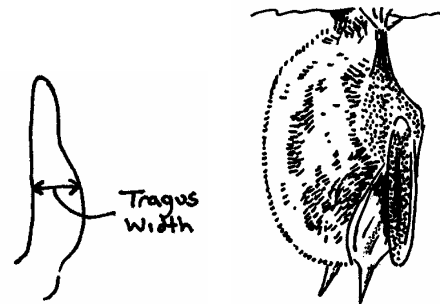
Extremely long ears (29-41 mm) joined at the base. Broad tragus (less than 5.5 mm. At rest the ears are often held only partially erect and look like rams horns. When in torpor the ears are tucked under the wings leaving the tragus exposed and looking like small ears. Face is pink. Upper fur is brown and is paler at the base. Under fur is pale buff. Thumb is long (more than 6 mm).



### Grey long-eared

Forearm length 36-44 mm

Very similar to species above. Tragus broader than brown-long-eared (more than 5.5 mm at widest point). Thumb is shorter (less than 6 mm). Face is dark and upper fur is grey (young brown long-eared fur is also grey so colour is not a reliable identification feature!)



## Horseshoe Bats

Two species in Britain.

Greater horseshoe bat      *Rhinolophus ferrumequinum*  
Lesser horseshoe bat      *Rhinolophus hipposideros*

### Key Features:

Horseshoe shaped noseleaf.

No tragus (anti tragus instead)

Wrap wings around their body when roosting

There is no mistaking a horseshoe bat once the nose has been seen.

They are very different in size.

Greater Horseshoe forearm length 51-61 mm

Lesser Horseshoe forearm length 35-42 mm

*Michael Walker, South Nottinghamshire Bat Group*



## References

Publications marked \* include a dichotomous key.

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