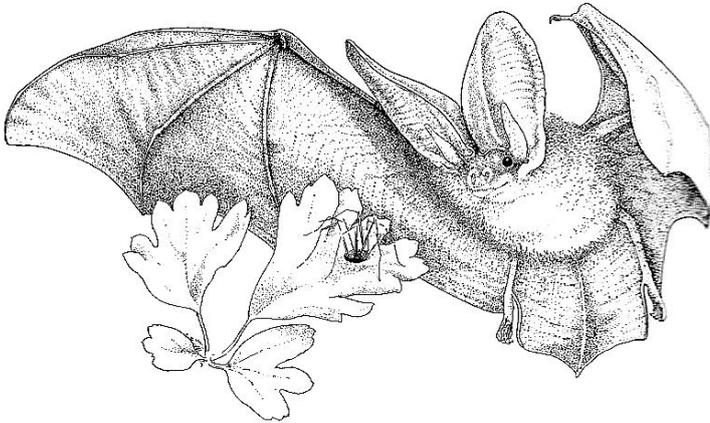
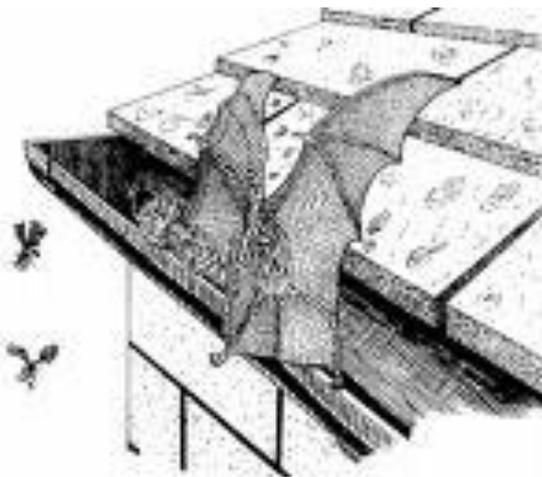


Table Manners for Bats

Bob Cornes describes how different species have different rules of etiquette



Brown long eared gleaning



Pipistrelles hawking for midges



A Daubenton's gaffing

British bats are insect feeders, but each species has its preferred type of insect food, and its own style of feeding. From the tiniest midge swallowed whole by a Pipistrelle to the largest cockchafer crunched by the sharp teeth of a Noctule or Serotine, there is an enormous range of insects available. Bats are equipped to feed on the wing, and most do so for the majority of the time, making full use of their echolocation skills to help them.

The most widespread method of catching food used by British bats is **hawking** – catching insects while in flight. All our local bats use this method to some extent, but Pipistrelles are perhaps the most spectacular. Swerving, twisting and turning rapidly enable Pipistrelles to follow flying insects (especially the smaller flies, such as midges) so effectively that they can snatch them from the air with their open mouths. If you are listening on a bat detector as you watch a bat doing this, you hear a 'feeding buzz'. This is a rapid burst of echolocation calls, sounding rather like a raspberry, that enables the bat to pinpoint the insect's position with extreme accuracy. The other feature that makes bats supremely well adapted for this method of hunting is the very flexible wing shape provided by the hand bones. Small movements of the bat's finger bones change the shape of the wing and allow the bat to change direction as rapidly as its prey.

The larger bats are less manoeuvrable, especially the narrow-winged Noctule and Leisler's bats which fly fast. They still manage to hawk some of their prey, which is usually large enough to be less agile in the air itself, but they have another method of hunting called **stooping**. This involves a steep dive to snatch the prey. If you have watched Noctules at Stockgrove or our Pipistrelle roost surveys, you will have seen them flying high and straight and then suddenly dropping down to snatch an insect flying below them.

An extension of this method of feeding involves the bat diving to ground level in order to grab an insect on the ground. This is called **pouncing**, and it is used by the Serotine to snatch dung beetles from horse and cattle pasture, and sometimes by Brown Long-Eared Bats.

Brown Long-Eared Bats and Natterer's Bats have an extremely skilful technique to take prey from the surface of leaves. It involves hovering while picking a moth or perhaps a spider from a surface. It's called **gleaning**, and it requires perhaps the most tricky flying skills of all. In David Attenborough's *Life of Mammals*, there was a sequence showing a Brown Long-Eared Bat unsuccessfully trying to glean a moth from a leaf. After it realized that it was on the wrong side of the leaf, it moved round to the other

side and plucked the moth from the leaf with apparent ease. The same programme showed a wonderful piece of film of a hovering Natterer's Bat snatching a spider from its web, and then flying backwards to avoid catching its wings in the sticky threads – gleaning at its most impressive. The two sequences showed different variations of the gleaning technique. The Brown Long-Eared Bat picked up the prey with its mouth, while the Natterer's used its feet.

Brown Long-Eared Bats will take quite large moths or resting butterflies, which could be quite tricky to eat while flying. They frequently carry their prey to a night roost which might be a tree, or the inside of a barn or other open building. While hanging by their feet, they will remove the less edible parts of the prey and drop them, while crunching the softer body. Sometimes an accumulation of wings, mixed with droppings, can be found under their roosting places.

The final technique used by bats in this area is known as **gaffing** or **trawling**. Daubenton's Bat uses its large

feet to catch insects from the water's surface as it flies very low across a pond or river. By using this method, the bat can exploit a source of food not available to bats which fly much higher above the water's surface. Daubenton's is equipped with exceptionally large feet with stiff hairs between the toes to aid in the gaffing of insects.

If you are able to see one of the feeding techniques described, you may be better placed to start identifying the bat. When combined with the information from the bat detector, the type of feeding gives clues to the identity, but you need to remember that bats are adaptable, and they are able to use more than one feeding technique, depending on the prey and the circumstances. Whether or not you can identify the bat, the sight of bats plucking food from the air, the water, the ground or another surface is spectacular and enthralling.

Beetling bats



When Bob Tony and I were in Brazil last year we were puzzled to emerge from our rooms in the early evening and to be almost knocked to the ground by low flying bats. It was like to cross a busy road peopled by dangerous drivers. Sometimes they were at waist height but more often they scudded past our ankles which was really confusing) flying the length of the veranda before beetling off round the corner of the building.

It wasn't until later that we discovered what they were doing – scooping beetles off the verandah floor.

By this time Bob was getting better at photographing bats in mid flight and explained to Derek Smith how it was done. Before long Derek had a small collection of beetles which he liberated to almost certain death. The more adroit made it the sanctuary of the flower border but the stragglers were soon snaffled and Derek has the pictures to prove it.

It was only once we had examined the pictures and measured the floor to get an idea of scale (to the utter bemusement of several passers by) – that we are able to get identification. The brown body colour also helped, but they were moving too fast to pick that out in the dark. – it was a bulldog bat who had obviously decided that catching fish and insects in/on the water surface was dull.



We had seen large numbers of these magnificent bats hunting over the water. They appeared as dusk fell We watched as they soared in the sky, pausing only to dive bomb the caymans, whose eye shine lit up the water with brake reversing lights- though they were going nowhere. So attention grabbing, that I for one failed to notice the mosquitoes which were feeding on me, and when I did notice stayed put anyway.

Adaptations for feeding



The foot of Bulldog bats are superbly designed. They have long supple digits for scooping fish out of the water. The long pointed leading edge with a short trailing edge and long forebody region they are so streamlined that they exert up to 39% drag than non fishing bat. The feet of a Bulldog bat, not one of our photos and we apologize for the unglorified hand