Why can't you say for sure whether or not it's a Leisler's?

Bob Cornes explains

This illustration of a Leisler's is from a series by a wildlife illustrator in Hungary, who actually specialise in birds. Check out more examples at http://kokayart.blogspot.com/2007_05_01_archive.html

How many bat species do we find in Bedfordshire? The question is often asked, and I always feel slightly uncomfortable as I give the rather unsatisfactory answer "*Between 10 and 12, probably*". Is it really so hard to say?

Well, yes it is. One of the two species causing the problem is Leisler's Bat (the other being Whiskered Bat). Leisler's Bat, *Nyctalus leisleri*, is like a smaller and rather shaggy Noctule. One of the older names for it is the Lesser Noctule. Seen in flight, it is indistinguishable from a Noctule but it can be readily identified in the hand by the shaggy fur on its head and forearms and by measuring its forearm length, which doesn't overlap with that of Noctules. The problem is quite simply that we have neither caught one nor found one grounded.

So why do we think we might have them in the county? Their echolocation calls are slightly different from those of Noctules, and we have about 15 records over a number of years that were identified as *probably* Leisler's. The most convincing, most consistent and most recent records come from Priory Country Park where Danny has recorded bats with calls like Noctules but a peak frequency in the mid 20s kHz which seem to be flying over open water. (Peak frequency is the frequency at which the bat call is loudest.) However, when Noctules fly into less open environments, they increase the peak frequency of their calls and make them very like Leisler's. In other circumstances, Leisler's vary their calls and they may become very like those of Serotines. Because bats adjust their calls to give useful echoes in the particular surroundings in which they find themselves, most habitats cause all three "big bats" to sound rather similar. We therefore have quite a few records which are classified as "Noctule or Leisler's", "Leisler's or Serotine" or even "unidentified big bat".

What we need is to catch one or, failing that, to have a clear view of a big bat flying in a very open place with a bat detector recording which shows the calls falling no lower than about 23 kHz. Please let me know if you see big bats looking like Noctules flying in the open when the sound on your bat detector fades out as you tune below 20 kHz. The most promising places are the larger lakes such as Priory or Harrold-Odell, but these tend to have so many bats flying over them that it can be difficult to listen clearly to one. As an optimist, I am sure that we shall eventually be able to say with conviction "*We have <u>at least</u> 12 species of bat in Bedfordshire*".

What's the point in continuous frequency (CF) echolocation?

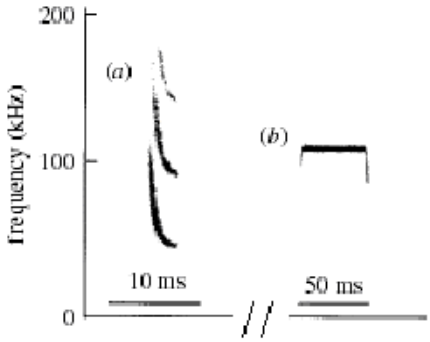

Photo of Pternotus parnellii (Parnelli's moustached bat) by Daniel Hargreaves

The call on the left is from a pipistrelle and you can see that the bats calls across a range of frequencies, whereas the horseshoe bat on the right has most of its call on one frequency

About 20% of the world's bats are capable of emitting continuous rather than the intermittent (For example Horseshoe bats do this) But why would they choose to so?

By using a robotic moth, scientists working in Taiwan found that fluttering insects produced "siren-like" echoes, which could be detected by bats with more sensitive hearing.

Bats that emitted continuous radar-like calls approached "Robo-moth" in far greater numbers than bats that produced intermittent calls Researchers think that this continuous echolocation may have evolved to help the bats locate fluttering prey. Intermittent-calling bats' reactions are slowed as they must wait for an echo response. Continuous callers, on the other hand, can track their prey's every move.

So now you know.
.http://news.bbc.co.uk/earth/hi/earth_news/newsid_9418000/9418