Bat Evolution and *Onychonycteris finneyi*

Shortly after the first edition of this book was published in the fall of 2007, evolution scientists reported the discovery of a new fossil bat, *Onychonycteris finneyi*, in the prestigious journal *Nature*. The editors of *Nature* thought the fossil was of such great importance they placed it on the front cover with the headline "*FIRST FLIGHT, Solving the mysteries of bat evolution.*"[1] This appendix will examine this newest fossil bat in detail.

All Bats Could Fly

If you compare the photograph of this newly discovered bat, *Onychonycteris finneyi*, to all of the other bats in Chapter 9, both living and fossil, you will notice they look very similar.

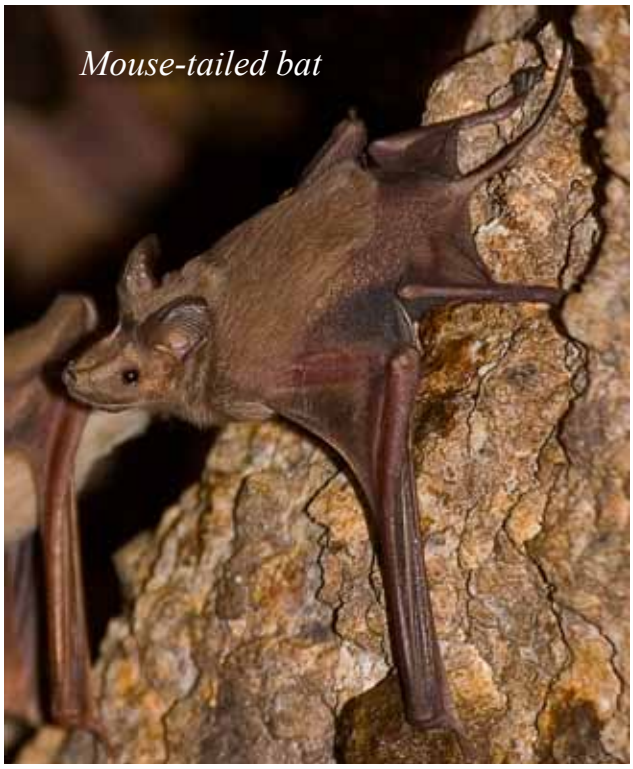
The theory of evolution suggests a bat evolved from a non-flying mammal about the size of a mouse or a shrew, over millions of years, through slow accidental mutations. If evolution is true, one should find various examples of fossilized mammals slowly evolving into a bat as the fossil record becomes more complete. In other words, scientists should find a ground mammal with partially developed wings, not yet capable of flying. Nearly one billion fossils have now been collected, including over 1,000 fossil bats,[2] but no partially evolved bat ancestors have been found. All fossil bats found, even *Onychonycteris finneyi,* were fully formed and could fly. (See photos below.)

All Bats Have the Same Bone Pattern

All bats have the same pattern of bones in the wings: a long upper arm bone (humerus), even longer forearm bones (radius and ulna), and very long digits. The digits (fingers) act as struts in the membranous wings. A bat, like a bird or an airplane, needs very large wings for lift in the flight process, hence the need for such long fingers and arm bones.

The scientists who reported the discovery of *Onychonycteris finneyi* wrote: "*The limb proportions of Onychonycteris are unique among bats, being intermediate between all other known bats and forelimb dominated non-volant* [non-flying] *mammals*."[1] This statement implies that *Onychonycteris* was a partially developed bat with arm bones half way between a ground mammal and a bat. But to arrive at this conclusion, these evolution scientists excluded the all-important digits from their limb-proportion calculations. Instead, they simply compared the arm-to-leg ratio of *Onychonycteris* to the arm-to-leg ratio of tree sloths, gibbons, and flying lemurs, animals with long arms that have nothing to

The fossil bat Onychonycteris finneyi **(far left)** *does not look significantly different from other fossil or living bats, such as this fossil bat from Germany* **(left)**.



do with bat evolution. They then declared *Onychonycteris* a missing link.

This conclusion stands in stark contrast with reality. Meaning, if one compares *Onychonycteris finneyi* to any other bat in Chapter 9, it is obvious that it is a typical bat, and not an intermediate ancestor. In fact, the authors of the same article report that *Onychonycteris* could fly in a manner similar to living mouse-tailed bats (above).

Onychonycteris Could Not Echolocate

Echolocation is a sonar-like sound system used by bats to "see" in the dark. Using echolocation, bats can fly in complete darkness and catch insects in mid-flight. They do this by making a series of clicks which bounce off of their surroundings, allowing them to form a sonar-like "picture" in their mind of what lies ahead.

There are two types of bats living today, microbats and megabats. Most microbats, such as the Ghost Bat shown in Chapter 9, have the ability to echolocate to catch insects at night. Megabats, such as the fruit bat seen on this page, are fruit eaters and generally do *not* need or possess the ability to use echolocation.

The authors of the *Nature* article reported the fossil bat *Onychonycteris* had small ear bones (cochlea), implying that this bat did not have the ability to echolocate. Because of this particular trait in *Onychonycteris*, they concluded that bats evolved the ability to fly before they could echolocate, implying evolution.

Scientists who oppose evolution argue that the absence of echolocation in a fossil bat, such as *Onychonycteris,* is not significant. Some fossil bats could echolocate, others could not. The same applies to bats today.

After 150 years of searching, there is still no evidence of a partially developed bat ancestor. Instead, bats appear in the fossil record fully formed and capable of flying. *Onychonycteris* is no exception.

Above: *Fruit bats, such as this one hanging in a tree in downtown Cairns, Australia do not have sonar-like echolocation.*