

Nature in the Neighborhood – February 2024

Going Batty

The Peabody Essex Museum (PEM) has a current exhibit about bats, so guess what this month's column is about? Yes, bats! If you haven't seen it, I urge you to go to the PEM exhibit, with the kids (there's lots of kid-friendly activities) or without, and learn more about these remarkable creatures and some of the "superpowers" they possess.

There are more than 1,400 species of bats worldwide, and they're found on every continent but Antarctica. Here in Massachusetts, nine species reside, with the two most common being the Little Brown Bat (*Myotis lucifugus*) and the Big Brown Bat (*Eptesicus fuscus*). Bear in mind that the Big Brown Bat is only "big" in relation to other bats -- it weighs in at between a half to just under an ounce, the weight, say, of a mouse. With fuzzy faces, big ears, and bright eyes, some bats bear a striking resemblance to cute little dogs. But they are unrelated to either mice or Chihuahuas. Being in the species order *Chiropter*, not *Rodentia*, they are, in fact, more closely related to primates -- that is, to us.

Unlike us, however, bats have the superpower of flight. They are the only mammals that truly fly, not just glide, as do so-called flying squirrels - but, fear not, they won't, as the old myth claims, fly into your hair, get stuck, and build a nest!

They also have another superpower - they use echolocation to navigate around objects - and avoid landing in your hair! While bats are not, as another old adage asserts, blind (some actually have better eyesight than we do), echolocation helps them avoid crashing into cave walls and to find night-flying insects to gobble up. Bats echolocate by emitting sound waves and listening for the echo. The Big Brown Bat can emit sounds at 138 decibels (think sirens and jet engines), As Ed Yong points out in his amazing book *An Immense World*, "these are among the loudest sounds of any land animal and it's a huge mercy that they're too high pitched for us to hear."

While often disparaged as "rats with wings," bats actually help to keep insect pests, such as mosquitoes, beetles, and moths, in check. A single colony of Big Brown Bats can apparently eat over a million insects in a year. This non-toxic pest control service translates into a savings of billions of dollars. Plus, eating insects isn't the only service that bats provide to us: they also pollinate plants and distribute seeds. Bat's contribution to maintaining healthy ecosystems and human economies is the reason the United Nations designated 2011-2012 as the International Year of the Bat.

So why do bats get such a bad rap? Being cave-dwelling creatures of the night doesn't help. Often misunderstood, bats have long been associated in Europe and this country with the underworld, magic, and superstition, not the least of which is the folklore of their metamorphosis to vampires.

Yes, vampire bats exist. But, none of the three species (out of 1400 bat species) lives this far north, nor can any of them transform into Bram Stoker's Count Dracula to bite

you on the neck and turn you into the undead. Preying mostly on livestock, they don't actually suck their victim's blood, but make a small cut and lap up the flowing blood with their tongues. Their saliva contains an anticoagulant to prevent the blood from clotting. Interestingly, the drug Draculin (yes, named after the Count) is an anticoagulant developed from vampire bat saliva and is being tested for use to treat stroke and heart attack victims.

But, what about bats transmitting diseases to humans? As with other wild animals, rabies should always be a concern. However, it is estimated that only about 1% of bats have rabies. Plus, you can get rabies only if a rabid bat bites you or you come into contact with its saliva - not by their mere flying overhead. Even so, you should never touch a bat, especially one you see during the day and who is acting strangely, and, if you do make physical contact with a bat, you should definitely seek medical attention.

The PEM's exhibit also points out that, "despite the widespread belief that COVID-19 pandemic originated with bats, no cases of bat-to-human transmission of the virus have been confirmed. Just when, or how, it spread to humans remains unknown." Researchers have pointed out that there is much to learn from studying bats, who with yet another superpower, can tolerate deadly diseases such as coronaviruses, as well as resist aging and cancer.

While bats have been generally feared and negatively regarded in the West, the art and pottery displayed in the PEM exhibit shows that they have been viewed much more positively in many parts of the East. Thus, "for more than 2,000 years, Chinese culture has celebrated bats and considered them a sign of blessing . . . and good luck bat motifs have been prolific in Chinese art since the 14th century."

When it comes down to it, it is much more likely that bats have more to fear from us than we do of them: loss of habitat, poisoning from pesticides, the disrupting effects of artificial light, and collisions with wind turbines. They also suffer from White-nose Syndrome, a fungal disease that has killed millions of bats in North America in the past decade, and for which there is, as of yet, no cure.

There's much to be celebrated about these superheroes of nature, and much to be done to help conserve the world's bats - including those in our neighborhood. You can welcome bats in your backyard by hanging a bat house, planting night blooming plants, avoiding pesticides, turning off or limiting outdoor lighting, and leaving the cat indoors.

If you want to learn more about these interesting and sometimes awfully cute (yes cute!) flying mammals, check out the presentation on bats (with stunning photos!) by Dr. Charlie Chester found on the Swampscott Conservancy's YouTube page: www.youtube.com/channel/UCC6texTfviyMIq6U40e6d2A

And, by all means, overcome any tendency you may have to chiroptophobia, and visit PEM to meet bats live and up close in its exhibit before it closes on July 28.