

Nature Around Us

J. Morton Galetto, CU Maurice River

Oh-Possum!

North America's only marsupial is the opossum, which makes it an interesting study.

About 35 years ago I was on an outing in Deerfield with an old-timer who I simply knew as Marony. Our bird dogs came on point, having discovered a Virginia opossum. Marony snatched up the "possum" in his gloved hand and slapped it with a loose glove in his other hand. In a few brief seconds the little marsupial went from baring its teeth to seemingly dead. Our dogs took one look at it and moved on, since a dead possum was of little interest. My eyebrows rose at the entire event and Marony simply said, "Playing possum." I was aware of this defense mechanism as a reaction to fear but had not witnessed it before. In fact it is not "playing at" anything because the response is involuntary; the state is known as thanatosis. However, hitting opossums to obtain this response is inadvisable. Besides being cruel, they possess 50 sharp pearly whites, the largest number of teeth of any North America land mammal. Also their body does not resort to feigning death immediately; first they growl, bare their teeth and defecate toward predators. Faking death is not unique to opossums, but they are the creatures best known for this reaction.

Opossums are North America's only marsupial. These primitive mammals raise their embryos under a patch of skin that people usually refer to as a pouch. A female may have up to three broods in a year. The pregnant female gestates for about two weeks; then the young emerge and climb to a fold of skin where they mature for two months. The original litter can be one to 14 but since the mother has only 11 to 13 nipples, those not accommodated perish.

They also sport some other unusual anatomical features. A bifurcated or forked endowment led to the false idea that they conceived through the nose. Observers who saw the mother tending embryos on her abdomen by placing her muzzle in her pouch received the incorrect impression that the young were being birthed through her nose. Opossums also come complete with a prehensile tail from which young can suspend themselves briefly. Adults use their tails to assist in climbing trees, although it can't truly support their full weight.

Opossums display immunity to rabies and snake venom. Their body temperature is too low for the rabies virus to survive or replicate well. Apparently they have peptides in their blood, or bonded amino acids, that play a role in this resistance. Claire Komives, Ph.D., San José State University, has been experimenting with neutralizing poisonous snake venom with a serum derived from these peptides. This has some very exciting implications. If a poisonous viper bites a person the victim often needs anti-serum specific to that species. Many places in the world have a variety of deadly snakes. The species inflicting the bite may not have been identified, or the specific antidote may not be on hand. So the development of a universal peptide may someday save lives.

Opossums are omnivores, eating both plants and meat. Their diet is diverse and includes carrion (flesh of dead animals), rodents, insects, grains, fruits, plants, eggs, frogs, and birds. A

number of recent nature articles have discussed their ability to consume large numbers of ticks. Forest ecologist Richard Ostfeld, of the Cary Institute of Ecosystems Studies in Millbrook, NY, has been studying the role played by mammals in the spread of Lyme disease. His team estimated that an opossum consumes 5,000 ticks each season (Cary Institute website). Ultimately, there may be a number of ways in which opossums are helpful to people.

With all these super powers, one might think opossums can easily live out their seven-year life expectancy. But like many of the animals we observe, becoming roadkill is the greatest danger they face. Thanatosis is not a very good defense when it comes to dodging cars; in fact, lying stiff in the road is an invitation to being flattened. Opossums are also primarily nocturnal, which lends itself to increased road incidents.

If you are trying to create enthusiasm in new readers and/or like reading aloud to young children, one of my all-time favorites is the children's book *Possum Come A-Knockin'*. I simply can't read it aloud without laughing. The repetition of the line "possum come a-knockin' at the door" in this wacky family tale simply slays me. There is so much more to possums than meets the eye!

Credit for some natural history facts: National Audubon, Field Guide to N. American Mammals, John O. Whitaker, Jr.