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Slow, steady path as a veterinarian

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Veterinarian Charles Innis has the kind of job that could have him conducting physicals on harbor seals one day and performing surgery on a tropical fish the next.

Innis, a Milford resident, is among those responsible for the medical care of around 40,000 animals, which span more than 700 species, at the New England Aquarium.

"That is a daunting clinical challenge, as the average vet commonly works with only a few species," said aquarium spokesman Tony LaCasse.

On a recent Tuesday, Innis worked on an injured Kemp's ridley sea turtle that arrived at the Boston

waterfront institution in October. He began by carefully cleaning some flesh exposed through a break in the turtle's shell, and then coated the area with honey, which acts as a natural antibacterial agent and contains enzymes that help slough away dead tissue.

"The injury looked like some sort of impact trauma, maybe from a boat propeller or a dredge," said Innis. "There were three large slices on his top, another three on the plastron," or underside, Innis said, "and he had a broken humerus so his upper arm had punctured through the skin, exposing muscle that was filled with sand."

Though the Kemp's ridley, the smallest of the sea turtles and a critically endangered species, is making progress, Innis said, he's far from recovered.

When the turtle first arrived its flipper with the broken bone was still whole, Innis said, but over time it became clear that part of it would have to be removed. Innis and his team began trimming away dead tissue. Now, Innis said, nice pink scar tissue is developing, including on the inside of the turtle's shell, and the bone is mending in a functional position.

"We have a big problem with turtles being hit by boats," said Innis. "Sea turtles come to the surface to breathe before going back underwater. They can usually be seen, so drivers must be observant."

The same advice holds true on dry land, particularly in May and June during turtle nesting season, he said. "If you're driving on a highway that has a pond or lake on the side there's a pretty good chance that turtles will be attempting to cross that road."

Innis said he has been passionate about turtles since elementary school, when his older siblings would take him to ponds in and around Milford to search for them. Now the 40-year-old married father leads the emergency medical treatment of the dozens of endangered sea turtles that wash up during the winter on Cape Cod beaches. Beyond requiring slow, careful rewarming, most of these turtles have numerous other medical issues, from trauma to pneumonia, he said.

Last summer, Innis consulted on a research project on leatherback turtles, the largest species of sea turtle, which can reach 2,000 pounds. He also took part in one of the few successful captive hatchings of the critically endangered Indonesian forest turtle.

"There was a time in the late 1990s that I had 40 to 60 animals in my home at any given time," said Innis. "A lot of that was studying some of the Southeast Asian species to figure out how they can survive in captivity."

Innis brought home his first terrapin at the age of 5, an Eastern box turtle that he found on Cape Cod. Now a protected species in Massachusetts, they were in abundance in the early 1970s.

"I built a little outdoor pen for it, but it escaped within a week or two," recalled Innis.

While his childhood turtle-catching episodes ended in high school, when he became interested in sports and other pursuits, his fascination for the slow-moving reptiles never waned.

Innis went to Cornell University, then attended veterinary school at the University of Pennsylvania. He was drawn to a career as a zoo veterinarian with a focus on

aquatic animals and wildlife, but as his first child was born while he was still in veterinary school, Innis decided an additional four years of an internship and residency would be a financial hardship, and he went into private practice.

His first year was spent in Turner, Maine, which offered a good learning experience, he said; with the nearest specialty hospital a five-hour drive away, Innis took on many interesting cases.

"There was a major fracture repair on a golden retriever, and emergency surgery for a condition called 'bloat,' which is when a dog's stomach twists and fills with gas," said Innis. "You have to open it up, untwist it, then sew it back into its normal position."

There was the call from a man whose pet chicken had been attacked by a dog, and nearly every night that he was on duty, Innis said, there would be a dog suffering after an encounter with a porcupine.

"You'd have to anesthetize the dog then sit with the owner for an hour or so plucking quills out of their throat, tongue, and mouth," said Innis.

Innis left Maine in 1995 to practice at the Westboro Animal Hospital, now part of the Veterinary Centers of America chain. He remained there for a decade, leaving for an associate veterinarian position at the New England Aquarium.

"Because I had an interest in nondomestic animals I took a lot of classes while I was in vet school and did elective training at the Philadelphia zoo and the wildlife clinic at Tufts," said Innis. "Even though I was in a small-animal practice, primarily working with dogs and cats, I developed a niche for myself - people would bring me their iguanas, turtles, geckos, and snakes."

Innis said that a lot of his training has been through self-education, studying published information and attending several national meetings every year covering advances in reptile medicine, surgery, and anesthesia. Now it's Innis who is a frequent lecturer at the national gatherings.

Innis begins his day at the New England Aquarium at 7:30 a.m., usually by reviewing lab tests that were sent out the previous day, such as bacterial cultures to see whether an animal needs antibiotics. In addition to overseeing care for the aquarium's residents, he also exchanges e-mails with other veterinarians about medical issues, and maintains the "turtle rescue blog" on the facility's website, www.neaq.org, detailing how his patients are faring.

Some of the facility's more interesting cases have included a few harbor porpoises that his team rehabilitated.

"When we release porpoises we put a small satellite transmitter on them," said Innis. "We're still getting transmissions from the guy we released around Memorial Day last year who went to Nova Scotia and was recently tracked off of Cohasset."

The aquarium staff has also treated some sea dragons; a goose fish, which they spayed after enlarged oviducts had inhibited her appetite and caused her to become anemic; and over the past few years they've been studying some previously unknown diseases, such as tortoise parasites, that come from Africa and South East Asia. Innis and his team have also published a new laparoscopic technique for removing ovaries from turtles without having to cut their shell.

"I spend a lot of time in April, May, and June wandering through swamps looking for spotted turtles and reporting them to the state so we can have documentation of what their populations are like," said Innis. He works with Lori Erb, the turtle conservation biologist for the state's natural heritage and endangered species program. Erb is responsible for developing conservation plans for turtle species that are native to Massachusetts.

"What stands out about Charlie is his enthusiasm and his dedication toward helping native turtles, both as part of his job and also as a hobby," said Erb. Innis said the best part of his job is the variety of species and the potential to learn things that are not already known.

"I'm here to keep myself learning and document the information so that when our generation is gone, the next generation can learn something from what we've already figured out."

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