

Deep dives of marine animals

Scientist now think they understand what has long mystified them — how ocean mammals can dive thousands of feet. Underwater pressure partially collapses the lung of whales, seals and dolphins, allowing them to sink. The rest of the lung remains inflated, aiding in the ascent. Here is the process for a blue whale.

Lung
Blue whale fills and expands lungs on the surface before diving.

Cartilage **Pressure**
During descent, the lower lung collapses as the body compresses from the pressure of water. The upper lungs are supported by cartilage which maintains its shape for ascent.

Animal	Depth of dives (feet)
Blue Whale	275 feet
Bottlenose dolphin	377 feet
Elephant seal	1,092 feet
Weddell seal	1,263 feet

Source: Science
Emily Holmes/AP

What's up, doc? Veterinarians warn of diseases spread from animals to humans

BY NONI SRIDHARA
The Battalion

The faces of many young kids will light up this month as they wake to find that in their Easter baskets the Easter bunny has brought them cute cuddly chicks and real live bunny rabbits.

However, once one realizes the various diseases these lovable animals can carry, they might not seem so cute anymore.

Dr. Leon Russell, a Texas A&M professor of veterinary medicine and anatomy said there are a wide range of diseases that can spread from animals to humans, known as zoonotic diseases, that frequently occur.

"There might not be some occurrence of a zoonotic disease everyday, but the Center for Disease Control (CDC) keeps track of the most recent occurrences and where they are located," he said. Russell said there are more than 200 known zoonotic diseases.

"While most of these are rare here in the United States, there are a couple dozen that are common and can be fatal," he said. One of the most common diseases is salmonella. Salmonella is a bacterial disease which is found in poultry, eggs and uncooked meat. Russell said this disease alone can kill thousands of people every year, but it is one of the most preventable.

One way of preventing salmonella is to thoroughly clean cutting boards, use different knives to cut chicken and other foods and to wash hands between handling poultry and handling other food products.

It is commonly known that salmonella can be transmitted by ingesting chicken, but many people are unaware that you can contract the disease by just handling the animal, according to Dr. Leslie Wilson, a small animal veterinarian for the Wellborn Animal Clinic.

"Salmonella can be transferred through the feces of the chicken, so people should be cau-

tious of not to directly touch these areas in the process of cleaning," she said.

While most rabbits around this time are auditioning for the coveted job as Cadbury bunny, others are infected with tularemia.

Tularemia causes skin lesions, high fever and and swollen lymph nodes, according to Russell.

Another zoonotic disease, anthrax, has been in the news lately because of fears that anthrax spores can be used as a biological weapon and because of resistance by some military personnel from being injected with a vaccine they fear to be dangerous. But the disease is also of general concern.

According to officials at the CDC, anthrax is an acute infectious disease caused by the spore-forming bacterium *Bacillus anthracis*, which occurs in warm-blooded animals but can also infect humans.

A CDC official reported that although anthrax is not typically reported in high volumes in the United States, most of the reports of animal infection are received from Texas, Louisiana, Mississippi, Oklahoma and South Dakota.

The CDC said the anthrax infection can occur in three forms: cutaneous, inhalation and gastrointestinal. The anthrax spores can live in the soil for many years, and humans can become infected with anthrax by handling animal products from infected animals or by inhaling anthrax spores from contaminated animal products. This disease can also be spread by eating undercooked meat.

Wilson said since she only deals with small animals, the majority of the pets she sees are domestic animals such as dogs and cats.

"The most common zoonotic diseases that I come across are fungal diseases such as ring-

COMMON ZOOONOTIC DISEASES

DISEASE	ANIMAL SOURCE	SYMPTOMS	METHOD OF TRANSMISSION
Salmonella	Poultry, eggs, and raw meat	Intestinal problems	Ingesting and handling live chickens
Anthrax	Livestock	Colds, death	Inhaling spores from animal products
Tularemia	Rabbits	Skin lesions, high fever, swollen lymph glands	Ingestion of wild rabbit meat
Leptospirosis	Cattle and dogs	Similar to infectious viral hepatitis, fever, chills, kidney damage	Exposure to water contaminated by urine from infected animals
Toxoplasmosis	Cats	Especially dangerous to pregnant women, possibly causing birth defects	Handling cat litter
Brucellosis	Cows	Causes high fever and can retard bone development	Through skin abrasions while handling animals or ingesting dairy products

JEFF SMITH/THE BATTALION

worm and mange," she said.

So does this mean people should lock up their pets and never be around animals again for fear of contracting some wild zoonotic disease? Not at all, but they should take preventive measures.

Even though a stray dog's sad "puppy-dog eyes" or a stray cat's soft purrs may make it difficult to refuse petting them, Wilson warned if there is a visible disease such as rabies or mange, the best solution is to call the local animal shelter and not directly handle the animal.

Russell said most of the preventive measures are common sense. "If you wash your hands after handling animals and pets, avoid kissing dogs or cats near their mouths, treat bites effectively and keep litter boxes and bird cages clean, this should ease any worries animal or pet owners might have," he said.

"Seal-cam" films dives

Dr. Randall Davis, a marine biologist at Texas A&M University-Galveston, and a team of researchers showed that sea mammals such as seals, dolphins and whales conserve energy by free-falling during deep ocean dives.

Davis said scientists have wondered how the mammals can stay underwater for so long. The Weddell seal, for example, can dive as deep as 1,600 feet and stay there for 20 minutes before surfacing.

To observe the mammal's behavior, Davis attached cameras to four kinds of sea mammals to videotape their activity below the surface.

"The animals are putting their oxygen supply on reserve. They know they can do this by gliding and not swimming," Davis said.

The scientists reported their research in the current issue of Science.

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