

## Chapter VII

# An Abbreviated Look at Pennsylvania's Amphibians and Reptiles

... A quick reference to interesting and informative facts about the amphibians and reptiles of the Commonwealth of Pennsylvania. For more complete information, refer to the text.

### THE SUBJECT IS . . .

#### Aquatic plants

... they are important to reptiles and amphibians. They are a source of food, support egg masses and provide a place to hide.

#### Bale

#### Banded rattlesnake

... the word refers to a group of turtles.  
... this nickname refers to the timber rattlesnake, Pennsylvania's largest poisonous snake.

#### Basking

... this habit helps rid the body of diseases and aids the development of eggs and the proper functioning of organs.

#### Black snake

... this common name is often applied to the black racer and black rat snakes.

#### Calls

... frogs and toads have true vocal chords and together produce a great variety of calls used to attract a mate or defend territory. Salamanders sometimes squeal, but do not actually produce a call.

#### Chain snake

... it's simply a nickname for the eastern kingsnake.

#### Chewing food

... not where snakes are concerned, at least. Their teeth are not designed for chewing and thus they must swallow their prey whole.

#### Claws

... lizards and turtles have them; salamanders and frogs and toads do not.

#### Cold-blooded animals

... like fish, the body temperature of amphibians and reptiles approximates that of their environment. Temperature is not regulated internally.

#### Colors and patterns

... they are helpful, but not always an accurate or complete method to identify the various species.

#### Cottonmouth

... this water moccasin does not live in Pennsylvania. It is not related to our northern water snake.



**THE SUBJECT IS . . .**

**THE FACT IS . . .**

**Death at sunset**

. . . muscle contractions could cause a snake to “move” for several hours after death, but it does not “wait until sunset” to die.

**Detached tail**

. . . many lizards can lose theirs to an attacker and grow a new one.

**Devonian Period**

. . . it goes 300 million years back in time, when the first amphibians appeared on earth.

**Dry strike**

. . . poisonous snakes do not always inject venom when they land a strike on an intended victim.

**Eft**

. . . this is the land-based sub-adult stage of the newt and the second of its three life stages.

**Eggs**

. . . amphibians’ eggs have no shell, but are protected by a capsule or jelly-like substance; reptile eggs have a shell, usually hard or nearly so.

**Eyelids**

. . . on lizards, they’re movable; snakes have eyelids or shields that are clear, but fixed.

**Eyes**

. . . they often are important identifying characteristics and can, among other things, help sort poisonous snakes from non-poisonous snakes and spadefoot toads from true toads.

**Facial pit**

. . . this pit, found between each eye and the nostrils on our poisonous snakes, is sensitive to heat.

**Fangs**

. . . these are actually long, hollow, modified teeth.

**Garden snake**

. . . this term sometimes is used when we actually are referring to the garter snake.

**Garden toad**

. . . it’s a common name for the American and Fowler’s toads, frequent visitors around homes.

**Grass snake**

. . . this name often is used to refer to our two green snakes.

**Hearing**

. . . some amphibians and reptiles have external ear openings. Snakes, however, “hear” by feeling ground vibrations.

**Hoptoad**

. . . it’s a common term attached to toads that “hop,” rather than leap, as do the frogs.

**THE SUBJECT IS . . .**

**THE FACT IS . . .**

**Hypnotic trance**

. . . contrary to belief, snakes do not hypnotize their prey. Their steady gaze is a result of unmovable, transparent eyecaps.

**Insects**

. . . they are a favorite food of many amphibians and reptiles; humans should appreciate that fact.

**Jefferson salamander**

. . . a U.S. president gave his name, through a Pennsylvania college, to this amphibian.

**Largest frog**

. . . in Pennsylvania, at up to six inches, the bullfrog captures the top honors.

**Largest lizard**

. . . in Pennsylvania, the broadhead tops the list at about 12 inches.

**Largest salamander**

. . . the eastern hellbender is the largest in Pennsylvania, reaching up to 20 inches.

**Largest snake**

. . . these honors in Pennsylvania go to the black rat snake at up to 100 inches.

**Largest toad**

. . . the American toad could attain 3½ inches.

**Largest turtle**

. . . the softshell turtles may measure up to 17 inches. Although shorter on average, snapping turtles probably weigh more.

**Larvae**

. . . depending on species, they could take a few days to years to transform into the adult stage.

**Leopard frog**

. . . this amphibian can reside in brackish water as well as fresh water.

**Loggerhead**

. . . this term is sometimes applied locally to the snapping turtle.

**Loss of fangs**

. . . that's no problem. A new pair is usually ready to drop into place.

**Lungless salamanders**

. . . it's an accurate description for they have no lungs, but "breathe" instead through the skin.

**Milk snake**

. . . it does not milk cows, as some believe, but it does search for mice around barns, a favorite hangout.

**Missing teeth**

. . . turtles lost them sometime during their evolution, to be replaced by a hard, horny beak.

**Moles**

. . . they gave their name to the mole salamander family, which, like this mammal, spends most of its life underground.

**THE SUBJECT IS . . .**

**THE FACT IS . . .**

**Mole salamanders**

. . . they do not have the nasolabial groove extending from the lip to the nostril; the lungless salamanders do.

**Mudpuppy**

. . . it remains a larva and will always have gills.

**Newt**

. . . this is the aquatic adult and final stage of three life stages; the larva and terrestrial eft precede it.

**Northern water snake**

. . . it is not a water moccasin, nor is it poisonous.

**Pit vipers**

. . . they include the poisonous snakes, so named for the heat-sensitive facial pit.

**Plastron**

. . . the turtle's lower shell is equipped on some species with a hinge to swing open or shut.

**Rain**

. . . sufficient rainfall is often crucial. A lack of it may cause the eggs of some species of amphibians to lay dormant until the next spring.

**Rattles**

. . . the number of segments does not reveal the age of the rattlesnake. A new segment is added with each shedding of skin, perhaps several times a year.

**Scales**

. . . reptiles—turtles, lizards, snakes—have them; amphibians—salamanders, frogs, toads—do not.

**Scent**

. . . this trait is often used by amphibians and reptiles to seek out a mate.

**Shedding skin**

. . . in order to grow, snakes and frogs must molt.

**Skin**

. . . it is generally smooth, soft and moist on amphibians. On reptiles, it is dry and usually covered with scales.

**Skinks**

. . . they are actually lizards with skin that is smooth and shiny.

**Slimy salamander**

. . . it perhaps isn't slimy, but extremely sticky instead. On this species, skin glands secrete a gluey substance.

**Slimy snakes**

. . . snakes are not slimy, not even when wet.

**Smallest frog**

. . . barely an inch long, the northern cricket frog is our smallest.

**Smallest lizard**

. . . the northern fence lizard, at four to 7¼ inches, wins these honors.

**Smallest salamander**

. . . as an adult, the four-toed could be as short as two inches.

**Smallest snake**

. . . it's a tie. The smooth earth snake and the worm snake, at seven to 10 inches, take the prize in Pennsylvania.

**THE SUBJECT IS . . .**

**Smallest toad**

**Smallest turtle**

**Snake stings**

**Softshell turtles**

**Spadefoot toad**

**Spreading adder**

**Springs**

**Stinkpot turtle**

**Striking position**

**Swamp rattler**

**Tadpoles**

**Tails**

**Terrapin**

**Toe pads**

**Tongues**

**Tortoise**

**THE FACT IS . . .**

. . . all of our toads could measure as little as two inches as adults.

. . . the bog and eastern mud come in at three inches on occasion as adults.

. . . snakes cannot sting, including with their tails as some people suppose.

. . . the shells of these turtles are just that—soft. They're covered with leathery skin rather than bony plates.

. . . it carries its own shovel. The spade on the hind feet is a useful and often-used digging tool.

. . . this, along with puff adder and hissing adder, is a name given to the hognose snake due to its habit of spreading its neck into a hood-like shape. But it's all a ploy used by this harmless snake to scare off predators or intruders.

. . . their clean, cool waters are a favorite, and sometimes extremely important, area for many amphibians and reptiles.

. . . its name bespeaks the foul odor produced from musk glands.

. . . snakes do not have to be coiled. They can strike if lying in an S-shape.

. . . the massasauga rattlesnake, its more common name, is an endangered species in Pennsylvania. It's this state's smallest poisonous snake.

. . . this general term is given to the larvae of frogs and toads, but not of salamanders.

. . . they assist many animals, but would probably hamper frogs and toads in moving about with leaps and jumps.

. . . these usually are the aquatic, hard-shelled turtles.

. . . these sticky discs are found under the toes of treefrogs and aid their moving and perching on trees and shrubs.

. . . they're used effectively by some amphibians to catch insects. On snakes, the tongue cannot penetrate the skin of prey, but is used to sample air particles.

. . . this general term usually refers to large land-dwelling turtles.

**THE SUBJECT IS . . .**

**THE FACT IS . . .**

**Toxic substances**

. . . many amphibians secrete a substance from skin glands that can be irritating even to humans. Mucous membranes are especially vulnerable.

**Tree cavities**

. . . as they do for several mammals and birds, cavities provide protection and home to the broadhead skink and numerous snakes. Allow a few snags to stand on your woodlot.

**Treefrogs**

. . . in spite of their common family name, many species seldom climb trees, spending most of their time on the ground. The spring peeper and gray treefrog are the exceptions.

**Turtles**

. . . they are the oldest living reptiles; they go back some 200 million years.

**Upland moccasin**

. . . it's better known in Pennsylvania as the northern copperhead. It's related to the water moccasin, which does not live in Pennsylvania.

**Vertebrae**

. . . they number less than 10 in frogs to several hundred in some snakes.

**Vocal sac**

. . . one or two are found on most frogs and toads, and when inflated become a source of air in helping produce a call.

**Warning rattle**

. . . don't count on it. Rattlesnakes have been known to strike without warning.

**Warts**

. . . although they are common on toads, they cannot be spread to humans.

**Wehrle's salamander**

. . . it's named for R. W. Wehrle, a resident of Indiana, Pennsylvania, who played a key role in describing this species.

**Wood frog**

. . . this frog can adapt to cold; it is found north of the Arctic Circle.

**World continents**

. . . all except Antarctica, have some population of snakes.



Figure VII-1

*The spring peeper is one of several species of treefrogs.*

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## Glossary

Definitions are included here as they relate to the subject matter of this book.

**Ambient** Surrounding; encompassing.

**Amphibian** Of the class Amphibia; cold-blooded vertebrates having gilled aquatic larvae; skin is moist, smooth and without scales.

**Amplexus** Position assumed by the frogs and toads while mating. The male clasps the female around the back with one or both pairs of limbs; the male then fertilizes the eggs as they are released by the female.

**Anal plate** On snakes, the scale covering the vent.

**Anticoagulant** Substance that impedes clotting of blood.

**Aquatic** Living in or frequenting the water.

**Arboreal** Relating to trees and shrubs; hunting, climbing, dwelling in.

**Autotomy** Reflex separation of body parts; breakage of a lizard's tail as an escape mechanism.

**Bask** To lie in or expose the body to the sun's rays; repose.

**Brille** Transparent covering or shield over the eyes of snakes.

**Candidate species** A species that could become endangered or threatened.

**Carapace** Upper shell of the turtle.

**Carboniferous Period** That period of time dating from 280 to 345 million years ago.

**Carnivore/Carnivorous** Flesh eater; feeds on animal tissue.

**Class** Classification or taxonomic category ranked above Order.

**Cloaca** Chamber that opens through the vent into which the reproductive, digestive and urinary systems empty.

**Cloche** Segments or rattle located on the tip of the tail of the rattlesnake.

**Clutch** A quantity of eggs usually deposited in a nest.

**Columella** Bone that carries vibrations from the lower jaw or eardrum to the inner ear.

**Constrictor** Snakes that kill their prey by suffocation with the body coiled tightly around the prey.

**Costal grooves** On salamanders, vertical grooves in the skin, located on each side between the limbs.

**Cranial crest** Bony ridge on the head of some toads.

**Crepuscular** Active at twilight.

**Cutaneous** Process used by some amphibians and reptiles by which oxygen is absorbed through the skin and the surfaces inside the mouth and throat.

**Deciduous forest** Of trees (usually hardwoods) that lose their leaves each autumn.

**Detritus** Loose, fragmented material, as on a stream bottom.

**Devonian Period** That period of time dating from 345 to 395 million years ago.

**Diurnal** Occurring during the day; active during the daylight hours.

**Dorsal** The back; upper surface of the body.

**Dorsolateral ridge** A fold of raised skin where the back and sides meet.

**Ecdysis** Molting or shedding of the skin.

**Ecosystem** Environmental or natural community and its dependent relationships.

**Embryo** The young in an early stage of development; in many amphibians and reptiles, the stage before hatching of the egg.

**Emergent** Plant rooted on the bottom of a body of water but with most of its growth above the water.

**Endangered species** A species whose population is low enough that it may be on the verge of extinction.

**Erythristic** Totally red.

**Extirpate** To eliminate; to lose; no longer existing in a particular area.

**Facial pit** Heat-sensitive organ; deep pit located between the nostril and the eye of the pit viper subfamily of snakes.

**Family** Classification or taxonomic category ranked above genus.

**Fang Long**, sharp hollow tooth.

**Fauna** Animals living in a particular area.

**Fertilization** The combining of egg and sperm that leads to the development of the embryo.

**Genus (pl. genera)** Classification or taxonomic category ranked above species; forms the first part of the scientific name.

**Gills** Organs through which oxygen is absorbed from water.

**Ground color** Primary or major background coloration.

**Hemotoxin** Poisonous substance affecting the bloodstream.

**Herbivore/herbivorous** Plant eater; feeds on plants.

**Herpetology** The study of amphibians and reptiles.

**Herpetofauna** Reptiles and amphibians of a particular area.

**Hibernation** Spending the winter months in a dormant or resting state in which bodily functions slow.

**Indigenous** Occurring naturally; native.

**Insectivorous** Feeding on insects.

**Intergrades** Intermediate subspecies with a combination of their characteristics, that occur in zones of contact or overlap between subspecies.

**Invertebrate** Animals without a spinal column (backbone).

**Jacobson's organ** Chemically sensitive organ providing a sense of taste-smell; it is used in conjunction with the tongue.

**Keel; keeled** Ridge on the dorsal scales of some snakes; length-wise ridge on the carapace of some turtles.

**Larva(e)** Early stage of an animal after hatching that differs in appearance from the adult.

**Metamorphosis** Transformation from the larval to the adult stage.

**Molt** To shed the skin.

**Montane** Relating to mountains or mountainous habitat.

**Morphology** Branch of biology dealing with the form and structure of animals.

**Musk** A substance with a penetrating, persistent, often offensive odor.

**Musk glands** Special glands that secrete musk.

**Nares** Nasal cavities; nostrils.

**Nasolabial groove** Small groove extending from the edge of the upper lip to the nostril; found on lungless salamanders.

**Neurotoxin** Poisonous substance affecting the nerves or nerve tissue.

**Nocturnal** Active during the night.

**Omnivorous** Feeding on both animal and plant matter.

**Order** Classification or taxonomic category ranked above family.

**Oviparous** Reproduction by eggs that hatch outside the female's body, producing young after the eggs are laid.

**Parotoid gland** Wart-like gland on the shoulder or behind the eyes in toads.

**Permeable** Capable of being penetrated.

**Phylum (pl. phyla)** Classification or taxonomic category ranked above class.

**Plastron** Lower shell of the turtle.

**Plate** Large scale, especially found on the shells of turtles; anal scale of snakes.

**Progeny** Offspring; descendant.

**Rectilinear Locomotion** Caterpillar-like movement used by snakes to move in a straight line by alternately gripping and pushing with its belly scales.

**Reptile** Of the class Reptilia; cold-blooded vertebrate without gill-breathing stage; skin is dry, usually covered with scales.

**Reticulations** Worm-like, wavy lines creating a network pattern across the body.

**Scale** Thin, flattened structure that covers at least a portion of the body of reptiles (and fish).

**Scute** Large scale; sometimes called a plate.

**Serpentine Locomotion** The alternate relaxing and contracting of muscles used by snakes to move rapidly. Appears as undulating S-curves of the body.

**Spade** Horny tubercle on each hind foot of the spadefoot toad.

**Species (pl. species)** Except for subspecies, the lowermost category in the classification of animals; forms the second part of the scientific name.

**Spermatophore** Jelly-like structure containing sperm deposited by male salamanders.

**Tadpole** Larva of a frog or toad.

**Taxonomist** Scientist who specializes in taxonomy.

**Taxonomy** The science of classification or arrangement of animals and plants according to their orderly natural relationships.

**Terrestrial** Residing or living on land.

**Threatened species** Any species likely to become endangered within the foreseeable future.

**Transformation** Changing from one life stage to another; metamorphosis.

**Tubercle** Small knob or protuberance on the skin.

**Tympanum** The eardrum.

**Venom** Poisonous substance or matter secreted by specialized glands of some animals.

**Vent** Anal opening.

**Vermiculation** Irregular wavy, worm-like lines.

**Vertebrae** Segments comprising the spinal column.

**Vertebrate** Animals having a backbone or spinal column.

**Viviparous** Reproduction through the birth of living young that develop within the mother.

**Vocal sac** Inflatable pouch on the throat of male frogs and toads; filled with air, it resonates during calling.

## INDEX

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*Italicized words are scientific names*

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