

# POISON DART FROGS

Anura Family: Dendrobatidae

Genus: multiple



Range: Southern Central America and north and central South America

Habitat: tropical rainforests

**Niche:** Diurnal, terrestrial; breed in trees, carnivorous

Wild diet: small invertebrates, particularly ants, which give them their poisonous properties in most

cases

**Zoo diet:** pinhead crickets, fruitflies **Life Span: (Wild)** 3-15 years

(Captivity) up to 20 years Sexual dimorphism: Males slightly smaller

Location in SF Zoo: South American Tropical Rainforest and Aviary

#### **APPEARANCE & PHYSICAL ADAPTATIONS:**

There are 40 species of *Dendrobates* poison dart frogs. All have bright coloration (aposematic coloration), which warns predators of their toxic skin secretions (alkaloids obtained from insects they eat). They are small frogs (most are no bigger than a paper clip). They have a good vision used to help capture prey. Their long, sticky tongue darts out and captures their prey once spoted. Each foot contains four toes which each have a flattened tip with a suction cup pad which is used for gripping and clinging to vegetation in its habitat. They lack webbing and are poor swimmers and are found near water but not in it.

Poison Dart Frogs have no webbing between the toes on their feet, so they are poor swimmers and are not often found in the water.

Weight: < 1 oz (< 28 g)

Length: 1 - 6 cm

#### **STATUS & CONSERVATION:**

Many species are threatened by habitat loss and over-collection for the pet trade.

#### COMMUNICATION AND OTHER BEHAVIOR

The males are territorial, calling to advertise to females and to defend their area. Calls are species dependent and can be anything from a buzz to trilling whistles. Females are slightly less territorial, and do not call, but will wrestle with other females over their space.

#### **COURTSHIP AND YOUNG**

Poison dart frogs breed in the trees during the rainy season. It is the females that facilitate courtship. She will locate a male and tap on its back with her hind feet to signal readiness for mating. Fertilization is external (amplexus). Eggs are laid in holes in tree limbs or in plants such as bryophytes or bromeliads that collect enough moisture to pool in the bottom to hold the tadpoles when they hatch. The tadpoles turn into tiny froglets up in the canopy. The frogs exhibit some maternal care by returning to the tadpoles and laying unfertilized eggs for them to feed on. In some other species, the male guards the eggs, and will transport the tadpoles on his back to small pools. Females are predatory on each other's eggs.

Incubation: 2 weeks Sexual Maturity: tadpoles reach transformation size in ~ 10 week # of Eggs: 8 – 10 average Weight at birth:

#### **MISCELLANEOUS**

Dart frogs, also known as arrow frogs, were named for their use by native peoples that dipped the arrow tips in their skin secretions for hunting mammals and birds. Three very toxic species of poison dart frogs from Colombia and South America are utilized by Indians to poison the tips of blowgun darts. The most poisonous frogs to humans are not in this genus. Poison dart frogs get their toxicity from some of the insects they eat which have feed on plants that have toxins. Other than certain snakes and large spiders, there are few predators that can cope with the noxious poisons of adult frogs. Since their captive diet does not include invertebrates with toxic compounds these frogs loose the poison from their skin.

The only natural predator of most of the poison dart frog family is a snake called *Leimadophis epinephelus*, which has developed a resistance to the frogs' poison. It is believed that the snakes detoxify the frog's poison with a substance contained in the saliva.

<u>Sources:</u> http://www.shoarns.com/Frogs.html

created 4/2008, updated 9/2011

Animal: The Definitive Visual Guide to the World's Wildlife eds. Burnie, David, and Wilson, Don E., 2001, DK Press; p452. The Guide to Owning Poison Frogs; Walls, Jerry G., T.F.H. Publications, Inc. p 17-23.

http://animals.nationalgeographic.com/animals/amphibians/poison-frog/

#### **DYING POISON DART FROG**

Class	Order	Family	Genus	Species	
Amphibia	Anura	Dendrobatidae	Dendrobates	tinctorius	
Range:	Guyana, Surinam, French Guiana and Brazil				
Habitat:	Tropical rainforests being restricted to "highland" (up to 350				
	metres (1,150 ft)) areas, found in heavy vines				
Niche:	Diurnal, insectivorous, terrestrial				
Diet:	Wild: variety of insects and arthropods				
	Zoo:				



**Special Adaptations:** The bright colors serve as a warning to would-be predators as their skin of is covered with toxic alkaloid poisons. Males have two vocal slits and an unpaired jugular vocal sac. A calling male attracts a female to mate. The female will approach the male and he will guide her, through a series of courtship motions, to suitable egg-laying sites in his territory. After egg deposit, the female leaves and the male guards the egg. Once they hatch, the male will carry the tadpoles to a large pool. Sometimes dozens of tadpoles from many males may be placed in one large water hole. The tadpoles, which can be very aggressive, reach transformation size in about ten weeks and feed on almost anything, including other tadpoles.

**Other:** Third largest species of poison dart frogs reaching two inches in length. The species encompasses a great diversity of color and patterning variants. This species is not the one native people use for darts, but they are prized in the pet trade. The specific name "tinctorius" (dying) comes from the way some indigenous tribes use the frogs. They rub them on the skin of young parrots, and the toxifying of the bird's skin causes them to grow feathers of different colors.

Source: created 9/2011

http://www.philadelphiazoo.org/zoo/Meet-Our-Animals/Amphibians/Frogs-and-Toads/Dyeing-poison-frog.htm http://animaldiversity.ummz.umich.edu/site/accounts/information/Dendrobates\_tinctorius.html

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#### **GOLFODULCEAN POISON DART FROG**

Class	Order	Family	Genus	Species	
Amphibia	Anura	Dendrobatidae	Phyllobates	vittatus	
Range:	Costa Rica				
Habitat:	Tropical rainforests,				
Niche:	Diurnal, insectivorous, terrestrial				
Diet:	Wild: variety of insects and arthropods				
	Zoo:				



**Special Adaptations:** The female lays 10-25 eggs up to twice a week. The male tends to the clutch and transports the larvae when they hatch after about 18 days on his back to a body of water, where they complete their metamorphosis to small frogs in about two months.

**Other:** This is a small species (1.25 in. to 1.5 in.) is black with mottled turquoise legs and has the two stripes running down its back for which it was named. These stripes are usually fire orange, but they may also be golden, yellow, or green.

Source: created 9/2011

http://amphibiaweb.org/cgi/amphib\_query?where-genus=phyllobates&where-species=vittatus

#### YELLOW-BANDED POISON DART FROG

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Class	Order	Family	Genus	Species	
Amphibia	Anura	Dendrobatidae	Dendrobates	leucomelas	
Range:	Venezue	ela and Colombia			
Habitat:	Tropical	rainforests amon	g leaf litter on th	ne forest floor,	or up to 3
	feet above ground level				
Niche:	Diurnal,	insectivorous, ter	restrial		
Diet:	Wild: variety of insects and arthropods				
	Zoo:				



**Special Adaptations:** They live in small groups in the wild and will attack neighboring groups with surprising ferocity for a creature of their size. This specis will warn off rivals by emitting loud calls. It is the only poison dart frog to estivate during dry spells. Amplexus. They have glandular adhesive pads on their toes and fingertips.

**Other:** Males mating calls are buzzing, humming, trilling or chirping sounds. Female rarely takes care of her young. The male transports the eggs in his mouth to nearby reservoirs where he guards and keeps eggs moist and wet. Females are bigger than males. They are very aggressive when defending their territory.

Source: created 9/2011

http://www.poisondartfrog.co.uk/leucomelas.php

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# Class Order Family

Class	Order	Family	Genus	Species	
Amphibia	Anura	Dendrobatidae	Dendrobates	azureus	
Range:	Sipaliwir	ni savanna of S. S	Suriname		
Habitat:	Tropical	rainforests amon	g leaf litter on th	ne forest flo	oor, or up to 3
	feet above ground level				
Niche:	Diurnal,	insectivorous, ter	restrial		
Diet:	Wild: variety of insects and arthropods				
	Zoo:				



**Special Adaptations:** Blue poison dart frogs lack toe webbing and are poor swimmers so are found hiding among boulders and debris near streams but never in the water. They are very territorial and aggressive both towards their own species and others. In order to ward off intruders, they use a series of calls, chases, and wrestling, which usually occurs within the same sex. During breeding season males produce quiet calls, which the female follows and tracks down the male. The females then physically fight over the male. Eggs are laid in the male's territory, which he defends. The male takes care of the eggs most of the time, but sometimes the female does as well.

**Other:** An adult frog has a body about 2 inches (5 cm) long and weighs ~ 0.3 ounce (8 g). Their blue color is generally darker on the limbs and belly and overlaid with black spots or patches, especially on the head and back. This species of frog is also identifiable by a hunch-backed posture. Females are larger and about half a centimeter longer than males, but males have larger toes. The tips of the toes in females are round while males have heart-shaped tips.

Source: created 9/2011

http://www.aqua.org/animals\_bluepoisondartfrog.html

http://animals.nationalgeographic.com/animals/amphibians/poison-frog/

http://animaldiversity.ummz.umich.edu/site/accounts/information/Dendrobates\_azureus.html

#### **GREEN & BLACK POISON DART FROG**

Class	Order	Family	Genus	Species	
Amphibia	Anura	Dendrobatidae	Dendrobates	auratus	
Range:	Central and South America, from Nicaragua and Costa Rica to				
	southea	stern Brazil and E	Bolivia. Introduce	ed in Hawa	aii.
Habitat:	Floor of	rain forests near	small streams o	r pools.	
Niche:	Diurnal,	insectivorous, ter	restrial		
Diet:	Wild:				
	Zoo:				



**Special Adaptations:** Poison glands located throughout the surface of their body. Their bright colors are believed to encourage predators with color vision to avoid the frogs. The boldly contrasting patterns may be aposematic to predators that lack color vision, although this has not been proven. These frogs eat ants that have high quantities of alkaloids, which makes the frog poisonous.

**Other:** *D. auratus* has many color variants. Most of them are black and either green or light blue, with the black in bands or spots. During the two week development period, the male returns to the eggs periodically to check on them. Once the tadpoles hatch, they climb onto the males back and he carries them to a lake or a stream.

Source: created 4/2015

http://animaldiversity.org/accounts/Dendrobates\_auratus/http://cosleyzoo.org/green-and-black-poison-dart-frog/

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# Class Order Family Genus Species Amphibia Anura Dendrobatidae Range: Habitat: Niche: Diet: Wild: Zoo:

Special Adaptations:	
Other:	
Source:	created