



# *Dendrobates pumilio*: Notes on Care and Breeding in Captivity

By Patrick Nabors



# Natural History of *Dendrobates pumilio*

- ✍ Found in Central America, Eastern coast and off shore islands
- ✍ Small, Diurnal, highly active
- ✍ Lowland rain forest, Forest edge, Disturbed habitat
- ✍ High population densities



# Southern Central America



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## *D. pumilio*, “Blue Jean” Form



✍ This is the form which is found on the mainland, from Nicaragua to Costa Rica



# Panama and Southern Costa Rica



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# Bocas del Toro Isles



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# Multiple Forms Inhabit Bocas del Toros Islands and Panamanian Mainland

- ✍ Different colors and size frogs of the same species on the same small island
- ✍ Nearby small islands occupied by yet more different forms



*D. pumilio*-

Locality Bastimentos Isle



*D. pumilio*  
"Bastimentos"  
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*D. pumilio*

Locality Bastimentos Isle



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*D. pumilio*

Locality Bastimentos Isle



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*D. pumilio*

Locality Shepard Isle, Bocas del  
Tora Archipelago



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*D. pumilio*

Locality Bocas del Toros  
Archipeligo



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# Unusual Life cycle

- ✍ Small clutches of eggs tended by male and female
- ✍ Female carries tadpoles individually to small water bodies, bromeliad axils, other plant “water holes”
- ✍ Female returns to feed the tadpoles



# Calling Male *D. pumilio*



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# Captive breeding rare

- ✍ *Dendrobates pumilio* have been heavily studied in the wild
- ✍ *D. pumilio* commonly imported for pet trade
- ✍ Despite these facts, captive breeding has been rare



# Problems with breeding in Captivity

- ✍ Males and females highly territorial
- ✍ Due to difficulty sexing these frogs, they have often been kept in groups
- ✍ Obligate egg feeding means only the female can successfully raise tadpoles



# First step to Breeding is Sexing!

- ✍ Some males can be identified by throat patch
- ✍ All other frogs are sexed by process of elimination.
- ✍ Individuals set up in tanks and watched for calling for about a week
- ✍ If no calling observed, assume female



# Throat patch, recently calling *D. pumilio*



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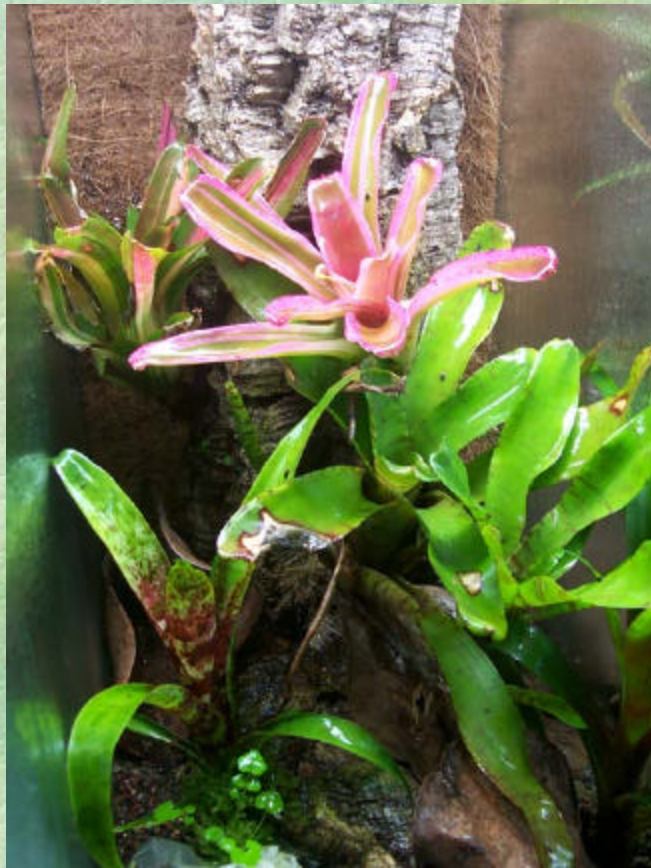
“Reverse” Sexual Dimorphism!  
Male, on left, is larger than female.



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# *D. pumilio* breeding setups used at Saurian Enterprises



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# Custom design tanks

- ✍ Some tanks built on ten gallon frame
- ✍ Doors in narrow end
- ✍ Misting nozzle for watering
- ✍ Drains
- ✍ Ventilation holes, Fans used in some tanks
- ✍ Intense light from compact fluorescent lamps



# Slant front glass tank



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# Rear view



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# Slant front, bottom view



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# Slant front, top view



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# Drain system for tanks



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# Misting system nozzle



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# 12 Tank unit for housing *D. pumilio*



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# Compact Fluorescent lamps provide intense light



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Once a pair are setup in these tanks, courtship often begins immediately, eggs soon follow



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# Courtship and Breeding

- ✍ Males call through out day
- ✍ Eggs laid in leaf litter or on bromeliad leaves
- ✍ Clutch size 4 to 11 eggs
- ✍ Egg development takes about twelve days
- ✍ Tank temperature run from low of 70 to high in mid 80s



# *D. pumilio* courting



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*D. pumilio*  
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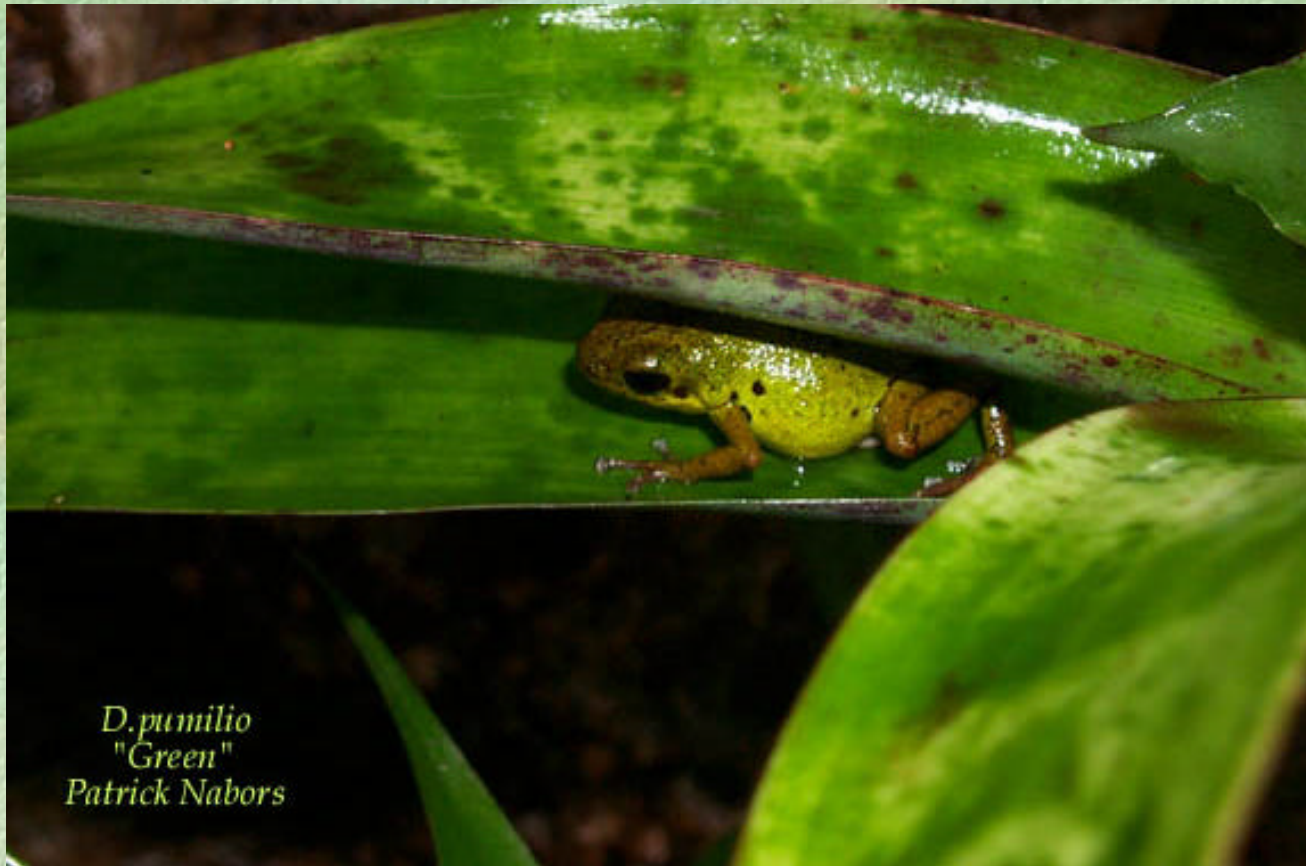




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# Female *D. pumilio* with eggs



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*D. pumilio*  
"Green"  
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# Fully developed *D. pumilio* eggs



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# Erupted tadpoles



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# Female *D. pumilio* carrying tadpoles to water holes



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# Female carrying two tadpoles



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# Orange and Green leg form heading for water



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- ✍ Females will only tend a few tadpoles at one time
- ✍ Three to five are most common
- ✍ Froglets take around forty five days to emerge, from deposition by female
- ✍ Pair may produce up to twenty or so froglets a year



# Female *D. pumilio* depositing food eggs



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# Feeding a tadpole



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# Factors leading to successful tad rearing by females

- ✍ Lots of food, regularly supplied
- ✍ High quality supplements for food
- ✍ Warm day time temperatures
- ✍ Frequent flushing of bromeliad axils with clean water
- ✍ Good bromeliad health



# Crickets and fruit flies are cultured to assure a constant supply of food



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# Emerging baby *D.pumilio*



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# “Spindly leg syndrome”

- ✍ SLS seen in many types of frogs
- ✍ Terminal
- ✍ One certain cause is low temps
- ✍ Other causes not certain
- ✍ Lack of nutrients in females diet may contribute to a deficiency in the food eggs



# Spindly leg syndrome (SLS) froglet



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# Bromeliad tips

- ✍ Check Bromeliads for health when possible
- ✍ Neoregalia species are best for mounting
- ✍ Small size bromeliads are best





# Froglet rearing

- ✍ Froglets are tiny, 1/4 to 3/8 inch
- ✍ Smaller froglets, less than 1/4 inch are often not viable
- ✍ Froglets need tiny food
- ✍ Freshly hatched crickets
- ✍ Springtails and leaf litter arthropods
- ✍ “Jewel” wasps



# Plastic box used to raise individual *D. pumilio* froglet



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# Wasps, *Nasonia vitripennis*



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# Newly hatched crickets



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# Baby *D. pumilio* grow fast!

- ✍ Once feeding on tiny foods, growth is rapid
- ✍ By four months males may be calling



# Some challenges remain

- ✍ Captive bred frogs sex ratio seems skewed to male
- ✍ Captive bred females are less prolific than wild caught so far