

AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

A. PROPOSAL

Inclusion of Dendrobates spp. in Appendix II.

B. PROPONENT

The Republic of Suriname.

C. SUPPORTING STATEMENT

1. Taxonomy

- 11. Class: Amphibia
- 12. Order: Anura (Salientia)
- 13. Family: Dendrobatidae
- 14. Species: Dendrobates Wagler, 1830
- 15. Common Names: English: poison-dart frogs,
poison arrow frogs
French:
Spanish:
- 16. Code Numbers: B-03-004-002-000

2. Biological Data

- 21. Distribution: The genus Dendrobates is confined to tropical South America and southern Central America (see Appendix A). The distribution area of many species is often well known, but limited and easily accessible.
- 22. Population: Population data are scarce. Although brightly coloured, Dendrobates spp. are difficult to census, because of their size and their tendency to conceal themselves. They are often found on the forest floors, between leaves and boulders. See further Appendix A for international status.
- 23. Habitat: A wide range of habitats is occupied. Some species are found along streams, others live away from water, on or near the ground in lowland or montane rainforest. Some species are truly arboreal and others live in open dry country on shaded ground or under low vegetation.

The frogs are active in the daytime and deposit their eggs in moist places on land. The eggs are tended until hatching, a nurse frog (male or female) carries the tadpoles on its back to a suitable aquatic environment. This behaviour is an important characteristic of the family Dendrobatidae. See further Appendix A.

3. Trade Data

31. National Utilization: Specimens of Dendrobates tinctorius are used to practice 'tapirage' or are used as 'dog-medicin' (see Appendix A).
32. Legal International Trade: In the 1970's, possibly as a result of the protection of the European herpetofauna, it suddenly became popular to keep Dendrobatid frogs in terraria, especially in the Federal Republic of Germany and in the Netherlands. Information accounts for large quantities of Dendrobates histrionicus, D. auratus, D. pumilio and D. granuliferus entering international trade and European pet shops (Hoogmoed, pers. comm.).

Mr. Bergmans kept files on trade in imported herpetofauna in the Netherlands between c. 1970 and c. 1980. His files on offers by pet shops in this period were kindly placed at the disposal of the proponent.

Imported Dendrobates spp. offered via pet shops in the Netherlands between 1970 and 1980:

Species	Origin	How many times offered?	Period	Remarks
<u>D. auratus</u>	CR	54	1969-1979	
<u>D. chrysopunctata</u> (?)	EC	2	1978-1979	
<u>D. galindoi</u> (=pumilio)	?	1	1980	
<u>D. granuliferus</u>	CR	31	1972-1980	Captive bred, 1980
<u>D. histrionicus</u>	CO	4	1974-1975	
<u>D. lehmanni</u>	S. Amer.	4	1978	
<u>D. leucomelas</u>	GY	4	1980	
<u>D. occultator</u>	CR (?)	1	1979	
<u>D. oesjoedti</u> (?)	PA	1	1980	
<u>D. pumilio</u>	CR	23	1972-1979	Captive bred, 1980
<u>D. speciosus</u>	CR	30	1973-1979	
<u>D. subpunctatus</u> (?)	EC	1	1975	
<u>D. tinctorius</u>	CO (?)	2	1976	
<u>D. typografica</u> (pumilio)	CR	7	1969-1972	
<u>D. spp.</u>	CR/EC	3	1970-1976	

Netherlands' imports in 1984 and 1985 (Source: Department of Agriculture and Fisheries)

Species	Year	Number	Country of Export
<u>D. auratus</u>	1984	152	Unknown
<u>D. granuliferus</u>	1984	60	Unknown
<u>D. pumilio</u>	1984	72	Unknown
<u>D. trivittatus</u>	1984	20	Suriname
	1985	50	Suriname
<u>D. tinctorius</u>	1984	70	Suriname
	1984	70	USA (origin Suriname)
	1985	360	Suriname
<u>D. lehmanni</u>	1985	250	Peru (after telephonic consultation, Hoogmoed concluded, it is certainly not <u>lehmanni</u> , probably <u>quinquevittatus</u> , <u>fantasticus</u> or <u>reticulatus</u>)

Netherlands' exports 1984 (Source Department of Agriculture and Fisheries):

5 specimens of D. leucomelas (captive bred) to USA.

UK imports and applications: 1980/1981 (source: Groombridge, 1985, in litt.):

D. auratus (few applications from Costa Rica, Colombia and Guyana!); D. azureus (1 application from the Netherlands, captive bred); D. femoralis (6 imports 1982, Suriname); D. granuliferus (few applications from Costa Rica, Colombia!, Guyana!); D. histrionicus (2 imported 1981 from Venezuela!; few applications from Ecuador, Suriname!, Bolivia!); D. lehmanni (few applications from Colombia, Ecuador!); D. leucomelas (25 imported 1981 from Spain!, 4 imported 1981 from Venezuela, few applications from Venezuela, Colombia, Costa Rica!) D. oculator (1 application from Colombia); D. pumilio (few applications from Costa Rica, Colombia!, Suriname!, Guyana!, Honduras!); D. quinquevittatus (1 application from the Netherlands, captive bred); D. speciosus (2 applications from Colombia!, Costa Rica!); D. tinctorius (few applications from Suriname and French Guiana); D. tricolor (2 applications from the Netherlands, captive bred); D. trivittatus (few applications from Suriname).

Import data of Dendrobatid frogs into the Federal Republic of Germany are not known to the proponent, but this country must be considered to be one of the major importers of these frogs (possibly together with the Netherlands and Switzerland). Data of 5,000-8,000 specimens of Dendrobates auratus imported each year from Costa Rica into FRG have been mentioned (Schulte, 1979).

USA imports 1984 (Source U.F. Fish and Wildlife Service, Federal Wildlife Permit Office)

<u>D. auratus</u>	15	Costa Rica
<u>D. histrionicus</u>	609	Ecuador
<u>D. pumilio</u>	15	Costa Rica
<u>D. tinctorius</u>	1,140	Suriname
<u>D. trivittatus</u>	770	Suriname
<u>D. spp.</u>	304	Ecuador
<u>D. spp.</u>	4	Suriname

Suriname exports 1984, 1985 and 1986 (Source: Suriname Forest Service)

	1984	1985	1986
<u>D. azureus</u>		2 USA	
<u>D. femoralis</u>	4 Neth		
<u>D. tinctorius</u>	52 Neth. 165 USA	715 Neth. 55 Canada	40 Neth. 20 Sweden
<u>D. trivittatus</u>	6 Neth. 1,850 USA	75 Neth. 4 USA	4 FRG 2 USA
<u>D. spp.</u>			30 Denm.

Since late 1970's terrarium keepers regularly breed Dendrobatidae in captivity. Files are kept, since 1982, of people in the Netherlands who are successful in breeding specimens of the family. The number of

people who are known to breed poison-dart frogs in the Netherlands is 20. Many captive bred frogs are sent to F.R. Germany. (Source Fleminks, in litt, 1986), Minimal estimates:

Species	Year	How many offsprings	How many breeders
<u>D. auratus</u>	1982	40	1
	1983	28+	3
	1984	123+	5
<u>D. azureus</u>	1983	40+	1
	1984	?	1
<u>D. leucomelas</u>	1983	29+	7
	1984	12+	3
<u>D. quinquevittatus</u>	1984	37	2
<u>D. reticulatus</u>	1984	?	1
<u>D. tinctorius</u>	1983	38+	4
	1984	36	2
<u>D. tricolor</u>	1983	129	5
	1984	255	3
<u>D. trivittatus</u>	1983	30	1

33. Illegal Trade: No illegal trade is known to the proponent, although from time to time specimens of Dendrobates spp. from countries with export bans appear in pet shops, or reports on obtaining specimens from these countries appear in terrarium magazines.

34. Potential Trade Threats: Judging from the increasing number of publications in recent years on Dendrobates in books about terrarium keeping and magazines for terrarium fanciers, it can be concluded that there is an apparent trend towards Dendrobates keeping. The species are small and colourful and numbers of people are trying to breed specimens. Records of this increased demand are apparent and well documented in a large number of articles published in herpetological and/or terrarium magazines in western Europe. Some of these articles clearly say that specimens were caught in the wild and brought to Europe. Transport techniques, although improved in recent years, seem still to be a risk and are combined with high loss rates.

It is also a rather widespread opinion among Dendrobates keepers, that it is best to import as many frogs as possible from the wild as long there are no trade restrictions, so that breeding programmes in the future can be put on a substantial base of animals (Niekisch, 1986, in litt.). Dendrobates spp. are relatively easy to keep and breed in captivity, although, after a few generations, the populations in captivity tend to collapse, hence, new material must be obtained. It appears to the proponent that Dendrobates fanciers often tend to collect material privately and not via pet shops. Since the late 1970's, terrarium fanciers and pet shopkeepers breed poison-dart frogs on large scale. The number of frogs in demand, however, is much higher than the number of frogs bred in captivity.

4. Protection Status

41. National: Nicaragua: Commercial hunting and export of wildlife is prohibited (Decreto 625, 1977).

Costa Rica: Strict wildlife trade legislation exists since 1970 (Ley 4551). New legislation (Ley 6919 of 1983) continues the prohibition of commercial hunting and trade in non-marine wildlife and wildlife products. Commercial exports are only allowed from registered captive breeding facilities or species harmful to agriculture.

Panama: Dendrobatid frogs are not included in national legislation.

Colombia: Decreto Ley 2811 of 1974 (the Natural Resources Code) prohibits the export of live terrestrial animals, except those bred in controlled environments and those used in scientific research. Special permission for any such export is required.

Ecuador: No exports of specimens of wild flora and fauna permitted for commercial purposes (exceptions for scientific and educational purposes, with special permission) Art. 49 of the Ley Forestal y de Conservación de Areas Naturales y Vida Silvestre, 1981.

Peru: Ley Forestal y de Fauna Silvestre of 1975 imposes tight controls over wildlife trade. Commercialization of wildlife from the Selva region is prohibited and trade in all wildlife from other regions is controlled.

Bolivia: No specific national legislation for Dendrobatidae (A ban on the capture and export of wildlife has been in effect from 1 April 1984 to 1 April 1985).

Brazil: Commercial trade in wildlife is prohibited (Lei 5197, 1967 and Portaria 3481, 1973).

French Guiana: Export, including transport from French Guiana to France is prohibited.

Suriname: At present, wildlife legislation only exists for the northern part of the country and for species occurring in national parks. New legislation is currently being developed. Commercial exports of vulnerable species will generally not be permitted.

Guyana: No restrictions on trade in Dendrobatidae.

Venezuela: Commercial trade is prohibited under Ley Protección a la Fauna Silvestre Res. Mac. RNR 5-276, Res. 95.

(Source: K.S. Fuller and B. Swift, 1984, Latin American Wildlife Trade Laws, WWF-USA).

42. International: None.

43. Additional Protection Needs: It is very difficult to census the status of a number of populations and to enforce national legislations, without monitoring international trade. A number of species and/or populations are vulnerable to the threats of large scale collection. This pressure on populations, in combination with alteration of their habitats, may cause some species to

become endangered. Although monitoring the international trade is extremely necessary, most species are not threatened with extinction at the moment (except possibly Dendrobates azureus).

The inclusion of these species of the genus in Appendix II is sufficient therefore and for look-alike reasons necessary.

5. Information on Similar Species

Within the family Dendrobatidae, at present c. 130 species are recognized, currently placed in three genera Colostethus (70 species); Dendrobates (c. 50 species) and Phyllobates (6 species). Only Dendrobates and Phyllobates are brightly coloured, and easily recognizable. This brilliant 'warning' colouration advertises the presence of toxic skin secretions that are effective in deterring many potential predators.

Dendrobates spp. are characterized by specific colouration, although intraspecific variation may be high (Myers, 1983). Due to this large intraspecific variation and the relatively small interspecific variation, look-alike problems may occur. Efficient monitoring of international trade in Dendrobates spp. is only possible when the genera Dendrobates and Phyllobates are included in Appendix II of the Convention.

6. Comments from Countries of Origin

None.

7. Additional Remarks

Dendrobates azureus occurs only in the Sipaliwini Nature Reserve in Suriname, where it is fully protected. Moreover, it will be also fully protected in the near future by the new Suriname game legislation.

The proposal concerns Article II 2(a) of the Convention for the species numbered 1, 2, 4, 6, 9, 11, 12, 14, 16, 20, 21, 22, 24, 26, 27, 28, 29, 33, 37, 38, 39 and 46 in Appendix A. The remaining species concern Article II 2(b) of the Convention.

8. References

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List of Species, Including Distribution, Habitat and Population

(Note: The remarks under "population" are data taken only from publicised material. Very few actual data on population sizes are known, or have been publicised. A number of populations occur in areas which are difficult to access. Data on the size or status of some populations may be different from the presented data if more information would be available and/or after status research of populations in the wild. Some species, even those which are presently only known from the type locality, in the end may even be abundant).

Dendrobates abditus Myers and Daly, 1976

Common Name:
Distribution: Ecuador
Habitat: Lower montane rainforests
Population: Only known from type locality

Dendrobates altobueyensis Silverstone, 1975

Common Name: Golden poison-arrow frog
Distribution: Colombia
Habitat: Lowland tropical rainforests
Population: Only known from type locality
Remarks: A proposal to include this species in Appendix I is added

Dendrobates anthonyi (Noble, 1921)

Common Name: Anthony's poison-arrow frog
Distribution: Ecuador, Peru
Habitat: Humid tropical forests
Population:

Dendrobates arboreus Myers, Daly & Martinez, 1984

Common Name:
Distribution: Panama
Habitat: Arboreal species, lowland, cloudy forests
Population: Known only from type locality, where it is abundant

Dendrobates auratus (Girard, 1855)

Common Name: Green poison-arrow frog
Distribution: Nicaragua, Costa Rica, Panama, Colombia. In 1932, 206 specimens were released on Oahu Island, Hawaii, and form a breeding population
Habitat: Low tropical wet forest, low tropical moist forest
Population: 'Common'

Dendrobates azureus Hoogmoed, 1969

Common Name: Blue poison-arrow frog
Distribution: Suriname
Habitat: Humid forest islands, surrounded by savannah
Population: Isolated in forest residues
Remarks: See also paragraph 7. Additional Remarks

Dendrobates bassleri (Melin, 1941)

Common Name: Pleasing poison-arrow frog
Distribution: Peru
Habitat: Humid forest
Population:

Dendrobates bolivianus (Boulenger, 1902)

Common Name: Bolivian poison-arrow frog
Distribution: Bolivia
Habitat: 800-1,200 m
Population:

Dendrobates bombetes Myers & Daly, 1980

Common Name:
Distribution: Colombia
Habitat: Cool wet montane forest islands
Population: Only known from type locality.

Dendrobates boulengeri (Barbour, 1909)

Common Name: Marbled poison-arrow frog
Distribution: Colombia, Ecuador
Habitat: Dense wet forest, 10-1,145 m.
Population:

Dendrobates captivus Myers, 1982

Common Name:
Distribution: Peru
Habitat:
Population: Known only from three specimens collected in the 1920's

Dendrobates erythromos Vigle & Miyata, 1980

Common Name:
Distribution: Ecuador
Habitat: Tropical wet forest
Population: Probably restricted to type locality

Dendrobates espinosai (Funkhouser, 1956)

Common Name: Turquoise-bellied poison-arrow frog
Distribution: Ecuador
Habitat: Wet forest, damp shady areas on the jungle floor
Population:

Dendrobates fantasticus Boulenger, 1883

Common Name:
Distribution: Peru
Habitat:
Population: Known only from type locality

Dendrobates femoralis (Boulenger, 1883)

Common Name: Brilliant-thighed poison-arrow frog
Distribution: Guyana, Suriname, French Guiana, Colombia, Ecuador, Peru,
Brazil
Habitat: Lowland forests, open microhabitats
Population:

Dendrobates fulguritus Silverstone, 1975

Common Name: Yellow-bellied poison-arrow frog
Distribution: Colombia, Panama
Habitat: Lowland tropical wet forest
Population: 'Rare'

Dendrobates galactonotus Steindachner, 1864

Common Name: Splash-backed poison-arrow frog
Distribution: Brazil
Habitat:
Population:

Dendrobates granuliferus Taylor, 1958

Common Name: Granular poison-arrow frog
Distribution: Costa Rica
Habitat: Lowland tropical wet/moist forest
Population:

Dendrobates histrionicus Berthold, 1845

Common Name: 'Kôkoé-pa' or 'chicororó'
Distribution: Colombia, Ecuador
Habitat: Lowland tropical rain and wet forest, shady forest floors
Population: 'Relatively common' (data in Myers and Daly, 1976)

Dendrobates ingeri (Cochran & Goin, 1970)

Common Name: Brother Nicéforo's poison-arrow frog
Distribution: Colombia
Habitat: 400 m.
Population: Known only from the type locality

Dendrobates labianus (Cope, 1874)

Common Name:
Distribution: Peru
Habitat: Forested slopes and clearings overgrown with grass
Population: Known only from the type locality
Remarks: The same species as Phyll.? in Silverstone, 1976

Dendrobates lehmanni Myers & Daly, 1976

Common Name:
Distribution: Colombia
Habitat: Montane forest (850-1,200 m)
Population: The species was known for years only from specimens sold in the animal trade. At present only known from type locality, where it was found abundant, although threatened by forest clearings (Myer & Daly, 1976)

Dendrobates leucomelas Steindachner, 1864

Common Name: Yellow-banded poison-arrow frog
Distribution: Venezuela, Brazil, Guyana, Colombia
Habitat: Lowland tropical wet/moist forest. Shady places on the floor and on moist stones
Population:
Remarks: The species is considered to be sacred by the Maquiritare Indians of Venezuela. They use the frog as a test animal to assay curare (Rivero, 1961)

Dendrobates maculatus Peters, 1873

Common Name: 'Chiriquí'
Distribution: Panama
Habitat: Lowland and montane rainforests
Population: Has for a long time been considered to be extinct. Its status at present is unknown

Dendrobates minutus Shreve, 1935

Common Name: Blue-bellied poison-arrow frog
Distribution: Panama, Colombia
Habitat: Lowland tropical wet/moist/rain forest, on ground or leaves
Population: Relatively common

Dendrobates myersi Pybur, 1981

Common Name:

Distribution: Colombia

Habitat: Rainforest, terrestrial

Population: Known only from 6 specimens, obtained at type locality

Dendrobates mysteriosus Myers, 1982

Common Name:

Distribution: Peru

Habitat: Elevations c. 900 m

Population: Only known from one specimen collected in 1929

Dendrobates occultator Myers & Daly, 1976

Common Name:

Distribution: Colombia

Habitat: Lowland tropical forest, conspicuous, arboreal

Population: Only known from the type locality, where only 14 specimens could be collected.

Dendrobates opisthomelas Boulenger, 1899

Common Name: Andean poison-arrow frog

Distribution: Colombia

Habitat: Higher elevations than any other Dendrobatid frog (1,160-2,200 m., extr. 3,813 m.). Premontane moist/wet rainforest, lower montane moist forest. Extensive habitat destruction probably has reduced its range considerably

Population:

Dendrobates parvulus (Boulenger, 1882)

Common Name: Ruby poison-arrow frog

Distribution: Colombia, Ecuador, Peru

Habitat:

Population:

Dendrobates petersi (Silverstone, 1976)

Common Name: Peruvian poison-arrow frog

Distribution: Peru

Habitat:

Population:

Dendrobates pictus (Bibron in Tschudi, 1838)

Common Name: Spot-legged poison-arrow frog

Distribution: Guyana, Suriname, French Guiana, Venezuela, Colombia, Ecuador, Peru, Bolivia, Brazil

Habitat: Lowland wet forest

Population:

Dendrobates pulchripectus (Silverstone, 1976)

Common Name: Beautiful-breasted poison-arrow frog

Distribution: Brazil

Habitat:

Population: The species is only known from the type-locality

Dendrobates pumilio O. Schmidt, 1857

Common Name: Flaming poison-arrow frog

Distribution: Nicaragua, Costa Rica, Panama

Habitat: Lower/premontane tropical wet/moist forest

Population: 'Common'

Dendrobates quinquevittatus Steindachner, 1864

Common Name: Amazonian poison-arrow frog

Distribution: Peru, Colombia, Ecuador, Brazil, French Guiana

Habitat: Lower tropical wet/moist/dry forest, premontane wet forest

Population:

Dendrobates reticulatus Boulenger, 1883

Common Name:

Distribution: Peru

Habitat:

Population:

Remarks: The species has for a long time been synonymized with Dendrobates quinquevittatus but has been re-established on the basis of presence of a typical skin toxin

Dendrobates silverstonei Myers & Daly, 1979

Common Name:

Distribution: Peru

Habitat: Wet montane forest, above 1,300 m., found in cleared places under logs

Population:

Remarks: The species was discovered in the 1940's as a consequence of road construction across the Cordillera Azul in the Peruvian Andes. It has been in unidentified collections since 1946

Dendrobates smaragdinus (Silverstone, 1976)

Common Name: Emerald poison-arrow frog

Distribution: Peru

Habitat: Dense wet forest

Population: Only known from the type locality

Dendrobates speciosus O. Schmidt, 1857

Common Name: Splendid poison-arrow frog

Distribution: Panama

Habitat: Lower montane wet forest

Population: Rare (?), only few localities are known

Dendrobates steyermarki Rivero, 1971

Common Name: Demonic poison-arrow frog

Distribution: Venezuela, summit of one isolated mountain

Habitat: Irregular rough, mossy terrain, with high trees

Population: Dense

Dendrobates tinctorius (Schneider, 1799)

Common Name: Dyeing poison-arrow frog

Distribution: French Guiana, Suriname, Guyana, Brazil

Habitat: Lowland, shady forest

Population:

Remark: The species is famous as one of the means by which the Indians of the Amazon drainage and the Guianas were said to practice 'tapirage', changing the colours of the feathers of living parrots.

In some regions of Guyana, blue specimens of the species are used by the Wai-Wai indians as 'dog medicin'. The frog is rubbed on the dog's nose which makes him more active in hunting and to increase the sensitivity of the nose.

Dendrobates tricolor (Boulenger, 1899)

Common Name: Phantasmal poison-arrow frog

Distribution: Ecuador

Habitat: Peters collected specimens in a dry area of high grass and pepper trees next to a stream

Population:

Dendrobates trivittatus (Spix, 1824)

Common Name: Three-striped poison-arrow frog

Distribution: Guyana, Suriname, Colombia, Ecuador, Peru, Brazil

Habitat: Lowland forest (below 800 m.)

Population:

Dendrobates truncatus (Cope, 1861)

Common Name: Yellow-striped poison-arrow frog

Distribution: Colombia

Habitat: Low tropical moist/dry forest

Population:

Dendrobates vanzolinii Myers, 1982

Common Name:

Distribution: Peru, Brazil

Habitat:

Population:

Dendrobates viridis Myers & Daly, 1976)

Common Name:

Distribution: Colombia

Habitat: Montane forest

Population: Known from two localities, conspicuous, only few individuals could be collected.

Dendrobates zaparo (Silverstone, 1976)

Common Name: Sanguine poison-arrow frog

Distribution: Ecuador

Habitat: Dense forests

Population: