AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

A. PROPOSAL

Inclusion of Phyllobates spp. in Appendix II.

B. PROPONENT

The Kingdom of the Netherlands.

1. Taxonomy

11. Class: Amphibia

12. Order: Anura (Salientia)

13. Family: Dendrobatidae

14. Species: Phyllobates Bibron in Sagra, 1841

15. Common Names: English: poison-dart frogs, poison-arrow frogs (common name for family Dendrobatidae)
French:
Spanish:

16. Code Numbers: B-03-004-003-000

2. Biological Data

21. Distribution: Southern Central America (Costa Rica and Panama) and northwestern South America (northern Colombia) (see map 1 and Appendix A).

The terra typica of a recently discovered species, however, is considerably more south and east than other Phyllobates spp., on the east side of the Peruvian Andes (Kneller and Henle, 1985).

22. Population: Population data are scarce (see Appendix A).

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 on moist places on land. The eggs are tended until hatching, a nurse frog carries the tadpoles on its back to a suitable aquatic environment. This behaviour is an important characteristic of the family Dendrobatidae.

3. Trade Data

31. National Utilization: Three species of Phyllobates, all from western Colombia, are the only frogs of any kind known to be used by Indian hunters for poisoning blowgun darts. This practice is only documented from Choco Indians in the Rio San Juan and Rio Saija drainages of western Colombia.

The other species excrete the same poison from glands in their skins, but they do not inhabit areas where blowguns are used (Myers, Daly & Malkin, 1978).

32. Legal International Trade: In the 1970's, possibly as a result of the protection of European herpetofauna, it suddenly became popular to keep Dendrobatid frogs in terraria. Anecdotal information accounts for large quantities of Phyllobates lugubris entering international trade and European pet shops (Hoogmoed, pers. comm.).

The Netherlands' imports of Phyllobates spp. in 1984:

Species	Description	Quantity	Country of Origin
P. lugubris	Live	60	Unknown
P. vittatus	Live	76	Unknown

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

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

Species	Origin	How many times offered?	Period	Remarks
P. bicolor	EC (?)	1	1976	
P. lugubris	CR	26	1972-1980	Captive bred, 1977
P. vittatus	CR	2	1978	
P. spp.	CO	1	1972	

Since late 1970's terrarium keepers regularly breed Dendrobatidae in captivity. Files are kept, since 1982, of the people in the Netherlands who are successful in breeding specimens of the family. The number of people which are known to breed poison-dart frogs in the Netherlands is 20. Many captive bred frogs are sent to the Federal Republic of Germany. (Source Fleminks, in litt, 1986). Minimal estimates:

Species	Year	How many offsprings	How many breeders
P. bicolor	1983	41+	1
P. lugubris	1984	130	2
P. terribilis	1983	20	1
	1984	36	1
P. vittatus	1982	5	1
	1983	32+	5
	1984	26+	2

33. Illegal Trade: No illegal trade is known to proponent.

34. Potential Trade Threats: Judging from the increasing number of publications in recent years on Phyllobates and Dendrobates in books about terrarium keeping and magazines for terrarium fanciers, it can be concluded that there is an apparent trend

towards keeping of Dendrobatidae. The species are small and colourful and numbers of people are trying to breed specimens (see proposal to include Dendrobates spp. in Appendix II).

The species 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 proponent, that poison-dart frog fanciers often tend to collect material privately and not via pets shops. Since the late 1970's, captive breeding of poison-dart frogs on a larger scale occurs.

The extreme toxicity of Phyllobates terribilis, means an additional attraction to some terrarium keepers.

4. Protection Status

41. National:

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 of 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.

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

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

42. International: None

43. Additional Protection Needs: Indications of an increasing popularity of dart-poison frogs with terrarium fanciers, in combination with an often localized distribution, makes these species vulnerable to collection and require monitoring of international trade.

5. Information on Similar Species

Within the family Dendrobatidae, at present ca. 130 species are recognized, currently placed in four genera Atopophrynus (1 species); Colostethus (70 species); Dendrobates (ca. 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. The genus Phyllobates is defined on the basis of presence of steroidal batrachotoxins, a specific group of skin alkaloids (Myers, Daly and Malkin, 1978).

A look-alike problem between species of the family Dendrobatidae may occur, since intraspecific variation may be high. 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. A proposal to include Dendrobates spp. is added.

Within the genus Phyllobates, two species (P. bicolor and P. terribilis) are more or less uniformly coloured, the others are striped.

6. Comments from Countries of Origin

7. Additional Remarks

The toxicity of the skin secretions of Phyllobates and of the frog-poisoned darts, is due primarily to batrachotoxin and monobatrachoitoxin, steroidal alkaloids that are stronger than curare mixtures. Especially the species P. terribilis is potentially dangerous to handle. Additional arguments to include the genus in CITES can be found in the proposal to include Dendrobates spp. in Appendix II. These arguments are also valid for Phyllobates.

8. References

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(Note: See remarks in Appendix A, of the Dendrobates spp. proposal)

Phyllobates aurotaenia (Boulenger, 1913)

Common name:	'Kökoé, Kokoi
Distribution:	Colombia
Habitat:	Low elevation rainforest
Population:	
Remarks:	Two forms of the species exist, a narrow and a broad striped form. The Chocó Indians (Emberá and Noanamá) from the San Juan drainage in Colombia extract blow gun poison from both forms

Phyllobates azureiventris Kneller & Henle, 1985

Common name:	
Distribution:	Peru
Habitat:	Wet forest bottom
Population:	Known only from the type locality

Phyllobates bicolor Bibron in Sagra, 1841

Common name:	'Nearâ'
Distribution:	Colombia
Habitat:	Wet rainforests (elevation 400-1,500 m.)
Population:	
Remarks:	The species is used for poisoning darts by the Emberá Chocó Indians, living near the headwaters of the Río San Juan

Phyllobates lugubris (O. Schmidt, 1857)

Common name:	Lovely poison-arrow frog
Distribution:	Costa Rica, Panama (Atlantic side)
Habitat:	Lowland forests
Population:	
Remarks:	The species secretes relatively small amounts of toxins from the glands in its skin

Phyllobates terribilis Myers, Daly & Malkin, 1978

Common name:	'Kokoi' or 'Co-coin'
Distribution:	Colombia
Habitat:	Lowland rainforests, rough hilly country. Unlike other Phyllobates spp. the species is not secretive.
Population:	The species is known from two localities in the vicinity of Quedraba Guanguí and La Brea, localities less than 15 km. apart in the upper Río Saija drainage. At the type-locality 500 specimens were collected by resident Indians and in La Brea 19 specimens were collected in three days (Myers, Daly and Malkin, 1978)
Remarks:	The most poisonous species of all Dendrobatidae. At least twenty times as toxic as other species and potentially dangerous to handle.

Phyllobates vittatus (Cope, 1893)

Common name:	Golfodulcean poison-arrow frog
Distribution:	Costa Rica (Pacific side)
Habitat:	Wet forest
Population:	
Remarks:	Secretes relatively small amounts of toxins