

AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

Other Proposals

A. PROPOSAL

- a) Inclusion of *Mantella aurantiaca* in Appendix I.
- b) Inclusion of *Mantella aurantiaca* in Appendix II.

B. PROPONENT

- a) The Kingdom of the Netherlands.
- b) The Federal Republic of Germany.

C. SUPPORTING STATEMENT

1. Taxonomy

11. Class: Amphibia
12. Order: Anura
13. Family: Ranidae
14. Species: *Mantella aurantiaca* MOCQAURD, 1900
15. Common Names:

English:	Golden mantella, Malagasy golden frog
French:	Grenouille dorée, grenouille rouge
Spanish:	
German:	Madagassisches Goldfröschen
Dutch:	
Malagasy:	Sahomanana malika

16. Code Numbers:

2. Biological Data

21. Distribution: The distribution of *Mantella aurantiaca* is restricted to an area of some 50 km² (920-975 m NN) in East Madagascar, near Antaniditra, ca. 15 km northwest of Andasibe (= Perinet; Taomasina Province), along the northern rim of the Marais de Torotorofotsy (ARNOULT 1966; BLANC 1981; BLOMMERS-SCHLÖSSER & BLANC 1993; NICOLL & LANGRAND 1989; ZIMMERMANN & HETZ 1992).

An earlier occurrence, which according to locals had existed along the southern rim of the wetlands area, has disappeared as a result of clearing and draining (ZIMMERMANN, unpubl.). Other reported finds within and at the periphery of the Réserve spéciale d'Analamazaotra near Andasibe (NICOLL & LANGRAND 1989) have not been confirmed in recent years. Presumably, the animals were brought into the area by man (ANDREONE 1991; ZIMMERMANN & HETZ 1992; ZIMMERMANN unpubl.). According to unspecified observations, *Mantella aurantiaca* can also be found outside of the areas described to date, at comparable altitudes in East Madagascar (IUCN 1993).

22. Population: The *Mantella aurantiaca* stock found to date, near Antaniditra, consists of 16 subpopulations (see Fig. 1). Presumably, additional subpopulations exist at the inaccessible western rim of the wetlands area, since the small *Pandanus* forests visible above the marais de Torotorofotsy are similar to the eastern habitats.

The subpopulations differ primarily in their characteristic colour morphs - "bright red", "intensive orange" (= "gold") and "dark red". In some cases, other morphs were found in groups of otherwise homogeneously coloured animals. To date, no systematic survey of the populations has been carried out; sample countings have been conducted only for male animals, which live less secretly than females. In some subpopulations, a density of up to 25 male animals per 100 m² was found. The number of calling males during the mating season varied between 20 and 160 animals per subpopulation (HETZ & ZIMMERMANN in print).

Although there seems to be some linkage between some subpopulations in the northern part of the distribution area, most subpopulations are probably isolated from each other by cleared areas, dry mountain ridges or major watercourses. The distance separating subpopulations ranges up to two km. (ZIMMERMANN unpubl.; IUCN 1993).

23. Habitat: The habitat of *Mantella aurantiaca* extends from the rim of the marais de Torotorofotsy along the tributaries to the mountain slopes in the northern part of the marsh area that is covered with primary forest. The species can be found on the forest floor, in thick underbrush, in strewn foliage or under fallen wood. The habitats normally lie in direct proximity to watering places - at most, 250 m from them. From November to April, the air temperatures in the area range between 18 and 28 °C, with a relative humidity of 80 to 100%. During the dry season, the daytime temperatures in July can drop to 0 °C (ARNOULT 1966; IUCN 1993; ZIMMERMANN *et al.* 1990; ZIMMERMANN, unpubl.).

During the mating season, which usually begins in December, males use intensive calls to lure females to ground sites where eggs are to be laid. These sites are found within the ground foliage, and 20 to 60 eggs are laid in each one (BLOMMERS-SCHLÖSSER & BLANC 1991). The rains that begin later wash the hatching larvae into small watering places (ARNOULT 1966). The reproductive success has been studied only in the laboratory; according to such studies, a female lays an average of six groups of eggs, containing a total of 450 eggs (ZIMMERMANN *et al.* 1990; ZIMMERMANN 1992; ZIMMERMANN & ZIMMERMANN 1992; ZIMMERMANN & ZIMMERMANN in print). After developing for 2 1/2 to 5 months, some 12 % of a female's offspring complete metamorphosis (ZIMMERMANN *in litt.*). In their natural habitat, probably only few young frogs reach sexual maturity, as a result of numerous environmental influences (ARNOULT 1966).

3. Trade Data

31. National Utilization: No information is available concerning whether, and in what manner, *Mantella aurantiaca* is used by the local population for its own purposes.
32. Legal Trade: As in the case with numerous other amphibian and reptile species of Madagascar, trade in *Mantella aurantiaca* has considerably increased since the mid-1980s, according to the general consensus (IUCN 1993). On the basis of spot checks of the export volume, it can be assumed that from 1990 to 1992 between 6,000 and 12,000 specimens were legally exported from Madagascar each year (IUCN 1993; BEHRA 1993). Most trade in Malagasy golden frogs is organized by three terrarium-animal wholesalers (ZIMMERMANN pers.com.); they offer the animals for export for about USD 4 (IUCN 1993).

A few minimum-imports statistics are available for the importing countries, for a comparable period: United Kingdom, 200 specimens (1991), 480 (1992); Netherlands 1,200 (1993); Germany, 850 (1991), 1,250 (1992), 1,400 (1993) (IUCN 1993; NL-CITES agency *in litt.*). Enquiries sent to other EC countries and the US, concerning import statistics, received no answer or the response that no statistics are kept on imports of *Mantella aurantiaca*.

The increased availability of *Mantella aurantiaca* on the international pet market is also reflected in price trends: in Germany, between 1982 and 1993, the average retail price for a single animal decreased to about one-third of its original level (from USD 60 to USD 17 - USD 20). Malagasy golden frogs are being sold in the US for USD 25; in France, for USD 64.

33. Illegal Trade: In light of the apparently unrestricted legal exports by terrarium-animal wholesalers, and of the low price per animal (cf. 34.), illegal trade in Malagasy golden frogs is probably insignificant. No precise data is available on this subject, however.
34. Potential Trade Threats: As a result of its small size, its attractive colouring and its habits, *Mantella aurantiaca* is one of the most popular anura for terrariums. Together with other *Mantella* species, this species has been collected and exported in large numbers in recent years (cf. also 34.). In light of its very limited distribution, and of the fact that most subpopulations live in isolation, uncontrolled collection of *Mantella aurantiaca* poses a considerable potential danger to this endemic species (ZIMMERMANN 1992; IUCN 1993). According to BLOMMERS-SCHLÖSSER (1993), only animals raised in captivity - and no animals caught in the wild - should be sold; ZIMMERMANN & ZIMMERMANN (in print) recommend a complete ban on commercial trade. Although this species has repeatedly been successfully bred in captivity (cf. ZIMMERMANN 1992, and the literature cited there), in Germany, for example, only animals caught in the wild are offered at relatively low prices. *Mantella aurantiaca* has thus become an affordable commodity for a large group of potential buyers, and yet the prospects for keeping it successfully are low. In addition, the mortality rate for animals handled by wholesalers and retail dealers, which is still unknown (IUCN, 1993), is likely to keep alive the demand for cheap *Mantella aurantiaca* specimens caught in the wild.

4. Protection Status

41. National: This species is protected by Madagascar law, and the export of specimens captured in the wild is ostensibly prohibited (cf. proposal of the NL, 1987). Terrarium-animal dealers require export licences from the Direction des Eaux et Forêts.
42. International: *Mantella aurantiaca* is currently not subject to international species-protection agreements. The species is listed in the draft of the new ordinance on implementation of CITES within the EC (Appendix B). Such listing, if the draft is approved, would make the import of *Mantella aurantiaca* into the EC subject to authorization.

The IUCN describes the status of the Malagasy golden frog as "vulnerable" (JENKINS 1987) or "endangered" (TONGE 1991).

Since 1991, the IUCN Captive Breeding Specialist Group has been developing protection initiatives for *Mantella aurantiaca*, within the framework of protection concepts for endangered reptiles and amphibians of Madagascar (MC LAIN 1991). A Madagascar Fauna Group was established to implement these initiatives (MORLAND 1992).

43. Additional Protection Needs: Like all rain forest areas in eastern Madagascar, the habitat of *Mantella aurantiaca* is under great threat from land clearing and, in this particular case, by drainage (GREEN & SUSSMAN; RAZARIELISOA 1988). According to very recent plans, the marais de Torotorofotsy is to be drained and used for graphite mining (ZIMMERMANN, pers. com.). Because the area around Andasibe has such a great faunal diversity, and because of the threat to it, various Madagascar institutions and conservation organizations, in co-operation with the German Society for Herpetology and Terrarium Science [Deutsche Gesellschaft für Herpetologie und Terrarienkunde (DGHT)], have prepared a proposal for a "Forêts et Marais de Torotorofotsy" nature reserve. Implementation of the proposal would not only protect the habitat of *Mantella aurantiaca*; it would also protect the habitats of an additional 67 amphibian, 37 reptile, 115 bird and 11 lemur species (NICOLL & LANGRAND 1989; GLAW & VENCES 1992).

5. Information on Similar Species

To date, 6 additional species of the endemic Malagasy genus *Mantella* have been described: *M. betsileo*, *M. crocea*, *M. expectata*, *M. laevigata*, *M. madagascariensis*, *M. viridis*. With the exception of *M. expectata*, which is found in the dry region of West Madagascar, these species are found in the wet forest areas of North, East and Southeast Madagascar. According to current knowledge, *M. crocea*, *M. laevigata* and *M. viridis*, in addition to *M. aurantiaca*, are limited to small areas. In light of the great variability in the genus' colour and markings, of the controversy surrounding the taxonomy of single forms and of the very recent discovery of new species (GLAW & VENCES 1992 provide an overview), additional changes in the taxonomy and systematics of the genus *Mantella* can be expected.

The other *Mantella* species are also (potentially) popular terrarium-animals. Trade in some of these has reached a scale comparable to that of trade in *Mantella aurantiaca*, and measures to evaluate their status and the amount of trade actually occurring are urgently required (IUCN 1993).

6. Comments from Countries of Origin

Not submitted so far.

7. Additional Remarks

8. References

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E9-DE01.PRO

DISTRIBUTION OF THE MANTELLA AURANTIACA
POPULATIONS IN MADAGASCAR, ANDASIBE

with the border of the proposed nature reserve
MARAIS DE TOROTOROFOTSY

