AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

Other Proposals

A. PROPOSAL

Transfer of Discocactus spp. from Appendix II to Appendix I.

B. PROPONENT

The Republic of Brazil.

C. SUPPORTING STATEMENT

1. Taxonomy

10. Division: Magnoliophyta (angiosperms; flowering plants)

11. Class: Magnoliopsida (dicotyledons)

12. Order: Caryophyllales (centrosperms)

13. Family: Cactaceae

14. Species: Discocactus Pfeiffer: all 8 species and subspecies, as listed below
D. bahiensis Britton & Rose 1922
D. buenekeri W.R. Abraham 1987
D. heptacanthus (Rodrigues) Britton & Rose 1922
[syn. Malacocarpus heptacanthus Rodrigues 1898]
subsp. heptacanthus
[syn. Discocactus boliviensis Buin. *et al.* 1977;
syn. D. cangaensis Diers & Esteves Pereira 1980;
syn. D. catingicola Buin. & Brederoo 1974;
syn. D. cephaliaciculosus Buin. & Brederoo 1975;
syn. D. diersianus Esteves Pereira 1979;
syn. D. estevesii Diers 1978;
syn. D. ferricola Buin. & Brederoo 1975;
syn. D. flavispinus Buin. *et al.* 1977;
syn. D. goianus Diers & Esteves Pereira 1980;
syn. D. griseus Buin. & Brederoo 1975;
syn. D. lindaianus Diers & Esteves Pereira 1981;
syn. D. melanochlorus Buin. *et al.* 1977;
syn. D. nigrisaetosus Buin. *et al.* 1977;

syn. D. pachythele Buin. & Brederoo 1975;
syn. D. paranaensis Backeb. 1960 nom. inval.;
syn. D. prominentigibbous Diers & E. Pereira 1988;
syn. D. rapirhizus Buin. & Brederoo 1975;
syn. D. semicampaniflorus Buin. & Brederoo 1975;
syn. D. silicicola Buin. & Brederoo 1975;
syn. D. silvaticus Buin. *et al.* 1977;
syn. D. spinosior Buin. *et al.* 1977;
syn. D. squamibaccatus Buin. *et al.* 1977;
syn. D. subterraneo-proliferans Diers & Esteves Pereira 1980]
subsp. magnimammus (Buin. & Brederoo) Taylor & Zappi 1991
[syn. D. magnimammus Buin. & Brederoo 1974;
syn. D. m. subsp. bonitoensis Buin. *et al.* 1977;
syn. D. hartmannii (Schumann) Britton & rose 1922;
syn. D. h. var. bonitoensis (Buin.) Braun 1984;
syn. D. h. var. magnimammus (B. & B.) Braun 1984;
syn. D. h. var. mamillosus (B. & B.) Braun 1984;
syn. D. h. var. patulifolius (B. & B.) Braun 1984;
syn. Echinocactus hartmannii Schumann 1900;
syn. Discocactus mamillosus Buin. & Brederoo 1974;
syn. D. patulifolius Buin. & Brederoo 1974;
D. horstii Buin. & Brederoo 1973
D. placentiformis (Lehmann) Schumann 1894
[syn. Cactus placentiformis Lehmann 1826;
syn. Echinocactus placentiformis (Lehm.) Schumann 1890;
syn. Discocactus lehmannii Pfeiffer 1839;
syn. D. insignis Pfeiffer 1837;
syn. D. linkii Pfeiffer 1839;
syn. D. besleri F.A.C. Weber 1896;
syn. D. tricornis Monv. ex Pfeiffer 1850;
syn. D. crystallophilus Diers & Esteves Pereira 1981;
syn. D. latispinus Buin. *et al.* 1977;
syn. D. multicolorispinus Braun & Brederoo 1981;
syn. D. pseudolatispinus Diers & Esteves Pereira 1987;
syn. D. pugionacanthus Buin. *et al.* 1977;
syn. D. pulvinicapitatus Buin. & Brederoo 1980;
syn. ? D. alteolens Lem. ex A. Dietr. 1846;
syn. ? Echinocactus alteolens (A. Dietr.) Schumann 1890;
syn. ? Cactus alteolens (A. Dietr.) O. Kuntze 1903]
D. pseudoinsignis Taylor & Zappi 1991
[D. insignis sensu Buin. 1980 non Pfeiffer 1837]
D. subviridigriseus Buin. et al. 1977
D. zehntneri Britton & Rose 1922
subsp. zehntneri

[syn. D. albispinus Buin. & Brederoo 1974;
syn. D. z. var. albispinus (B. & B.) Braun 1990;
syn. D. z. f. albispinus (B. & B.) Riha 1983]
subsp. boomianus (Buin. & Brederoo) Taylor & Zappi 1991
[syn. D. boomianus Buin. & Brederoo 1971;
syn. D. z. var. boomianus (B. & B.) Braun 1990;
syn. D. z. var. horstiorum Braun 1990;
syn. D. araneispinus Buin. *et al.* 1977;
syn. D. z. var. araneispinus (Buin.) Braun 1990]

The plant described as D. subnudus Britton & Rose 1922 is apparently a member of this genus, but of uncertain identity. D. woutersianus Brederoo & Broek 1980 is believed to be an artificially produced hybrid between D. horstii and D. pseudoinsignis. It has not been recorded in habitat.

The above list is based on Taylor (1981) and Taylor & Zappi (1991a, 1991b). A complete listing of recently published names can be found in Eggli & Taylor, eds (1992). Various amateur botanists and field-collectors recognize many additional, poorly-defined species, as the above synonymy indicates (see Taylor 1981).

2. Biological Data

21. Distribution: Six of the 8 species listed above have very restricted distributions in eastern Brazil (states of Bahia and Minas Gerais). D. horstii, D. buenekeri and D. subviridigriseus are each known from single localities today, although the last-named may have had a more extensive range in the past, much of its area having disappeared beneath the great dam lake, the Represa de Sobradinho, of the Rio Sao Francisco (Taylor & Zappi 1991b; Buining 1980). D. bahiensis is known from only two, very disjunct localities in Bahia, and it is probable that the two populations involved may represent different subspecies (Taylor & Zappi 1991b). D. pseudoinsignis occurs over an area of about 20 km only (I. Cordeiro, pers. comm. to N.P. Taylor; Taylor & Zappi 1991b), while D. zehntneri s.l. is known from only 5 localities in northern Bahia (Mun. Sento Sé and Mun. Morro do Chapéu; Taylor & Zappi 1991b). The remaining two species have greater ranges, though both are of infrequent occurrence. D. placentiformis is found in the Brazilian state of Minas Gerais, east of the Rio Sao Francisco, between Mun. Gouveia and Mun. Salinas (Taylor & Zappi 1991b). D. heptacanthus subsp. heptacanthus ranges from western Minas Gerais, western Bahia and Piauí to Mato Grosso and eastern Bolivia; subsp. magnimammus (syn. D. hartmannii etc.) is reported from north-eastern Paraguay (Esser 1982: Abb. 25) and adjacent Brazil (Mato Grosso do Sul; Taylor & Zappi 1991a). In view of the huge area occupied by

this species it is likely that its occurrence has been seriously under-recorded.

22. Populations: So far as is known D. horstii, D. buenekeri, and D. subviridigriseus are known from single populations of very limited extent. Information on the whereabouts and status of D. buenekeri is not available, but it appears to be known from the type locality only. The site of D. horstii was heavily ransacked by commercial collectors in the early 1970s (Buining 1974: 70) and 1980s and the degree to which it has recovered is not known. Zappi (1989) was unable to find the species during extensive field work in the region whence it was originally described. It is probably not extinct, but very rare and, due to its small size, difficult to locate. It was recently observed at the type locality by a French cactologist, but the size of the population was not reported (M. Kroenlein, pers. comm. to U. Eggli). D. subviridigriseus was observed at its only known modern site in 1991 (Taylor, Zappi & Eggli, pers. comm.) and the population counts a few hundred individuals at most. D. pseudoinsignis is known from 3 or 4 populations of less than 100 individuals each (I. Cordeiro, pers. comm. to N.P. Taylor). D. bahiensis is poorly studied at its northern locality (Buining 1980), but its southern Bahian site holds less than 200 individuals (N.P. Taylor, pers. comm.). Populations of D. zehntneri subsp. zehntneri are poorly known, but those of subsp. boomianus include less than 500 individuals and have been visited by collectors with commercial interests in the past (N.P. Taylor, pers. comm.; Buining 1980: 2; Uebelmann 1984: [2]). D. placentiformis is known from about 15 sites/populations, but none of these holds more than 500 individuals and the majority are much smaller (N.P. Taylor, pers. comm.; Zappi 1989; Taylor & Zappi 1991b). D. heptacanthus is not well known in terms of population size, but at least some of its habitats are threatened or have been destroyed (Buining 1974: 69).

23. Habitats: D. horstii, D. pseudoinsignis, D. buenekeri and D. placentiformis occur on quartzitic sands and gravels in campo rupestre and in nearby campo cerrado (Taylor & Zappi 1991b). D. heptacanthus is found in campo cerrado on various types of oligotrophic substrates (Buining 1980; N.P. Taylor, pers. comm.). D. zehntneri subsp. zehntneri, from its distribution, can be assumed to occur on rock outcrops in caatinga, while the subsp. boomianus is known from flat rocks in the campo rupestre/caatinga ecotone (Taylor & Zappi 1991b). D. bahiensis and D. subviridigriseus both occur in caatinga, the former on either limestone or crystalline gravels, the latter in periodically flooded, riverine alluvium in association with carnaúba palms (a remarkable ecological association for a cactus; Taylor & Zappi 1991b).

3. Trade Data

31. National Utilization: No data relating directly to any Discocactus species are available.

32. Legal International Trade: In recent years the level of world trade in

Discocactus spp. has varied, the annual average for the years 1983-89 being 2,367 plants, of which less than one third were taxa named as species (WTMU 1991). During 1984-85 Brazil was the largest exporter of Discocactus, including plants named only to genus and those named as species. In this period Brazilian exports were as follows (WTMU 1991):

D. spp.	1072
D. heptacanthus	822
D. horstii	907
D. placentiformis	1241
D. zehntneri	742

The majority of these plants was declared to be artificially propagated. However, during 1985 and 1986 Dutch Customs confiscated two Brazilian consignments of this genus containing 100s of habitat-collected specimens, including numerous individuals of the extremely rare D. horstii and D. zehntneri (Ministry of Agriculture and Fisheries [The Netherlands] 1987). These consignments had been declared as artificially propagated by their exporters.

33. Illegal Trade: Extent unknown, but at least one Swiss nursery company is known to have imported substantial numbers of wild-collected Discocactus during the 1970s and early 1980s, before detailed trade figures were recorded (N. P. Taylor, pers. comm.). It is possible that such importations were incorrectly declared as artificially propagated.

Wild-collected specimens of Discocactus have been regularly offered for sale in the Netherlands, Germany and Belgium.

34. Potential Trade Threats

341. Whole Live Specimens: As noted under 32. above, there is considerable trade in Discocactus plants at the present time. Propagation from seed is practised in the Netherlands and especially in southern California (USA). Adequate stocks of most Discocactus taxa exist in cultivation to supply horticultural demand for these popular plants (N.P. Taylor, pers. comm.). At least one nursery in Brazil is holding large stocks of illegally collected Discocactus species.

342. Parts and Derivatives: All trade data for these species relate to whole plants. With the exception of D. zehntneri and D. buenekeri, members of this genus normally do not branch, unless badly damaged, and are therefore rarely propagated by vegetative means. Trade in seeds of Appendix-II species usually is not monitored by CITES, so its extent is unknown. However, it is known that commercial seed-gathering of Cactaceae is practised in Brazil, and seeds of some taxa are offered for

export by the kilogram to wholesale outlets (U. Eggli, pers. comm. to N.P. Taylor). It is probable that endangered Discocactus species may be exploited in this way. At least one 'nursery' is known to do so.

4. Protection Status

41. National: The export of wild-collected Cactaceae and Orchidaceae from Brazil is a violation of the Portaria Normativa 122 (21.03.1985). According to Fuller & Swift (1984), Bolivia and Paraguay do not have laws protecting plants.

42. International: All species of the genus Discocactus have been included in Appendix II of CITES since 1973.

5. Information on Similar Species

The genus is easily recognized for its disc-shaped stem with a woolly and often bristly terminal, non-chlorophyllous cephalium, a structure encountered amongst globular Cactaceae only in the genus Melocactus. The species of Discocactus are not all easily distinguished one from another without specialist knowledge. Therefore, the genus as a whole is being proposed for Appendix-I listing, even though two of its 8 species are not seriously threatened. These two species cannot be distinguished with ease from at least two amongst the 6 rare or endangered species.

6. Comments from Country of Origin:

Principal country of origin is proponent. Comments have been sought from Bolivia and Paraguay.

7. Additional Remarks

Although regular trade in wild-collected specimens of Discocactus species may not be taking place at the present time, such trade has certainly occurred in the recent past. None of the known wild populations of the six rarest, endemic Brazilian species can withstand further heavy collecting without risking their extinction in the wild.

8. References

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