

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



Fourteenth meeting of the Conference of the Parties
The Hague (Netherlands), 3-15 June 2007

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Amendment of the annotations for the following taxa to read:

Taxon	Proposed annotation	Current Annot.
<i>Adonis vernalis</i>	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.	#2
<i>Guaiacum</i> spp.	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.	#2
<i>Hydrastis canadensis</i>	Designates underground parts (i.e. roots, rhizomes): whole, parts and powdered.	#3
<i>Nardostachys grandiflora</i>	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.	#3
<i>Panax ginseng</i> , <i>Panax quinquefolius</i>	Designates whole and sliced roots and parts of roots.	#3
<i>Picrorhiza kurrooa</i>	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.	#3
<i>Podophyllum hexandrum</i>	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.	#2
<i>Pterocarpus santalinus</i>	Designates logs, wood-chips, powder and extracts.	#7
<i>Rauvolfia serpentina</i>	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.	#2
<i>Taxus chinensis</i> , <i>T. fuana</i> , <i>T. cuspidata</i> , <i>T. sumatrana</i> , <i>T. wallichiana</i>	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.	#10
Orchidaceae spp. in Appendix II, and all Appendix-II and -III taxa annotated with #1 (see Table 1 for list of taxa concerned)	Designates all parts and derivatives, except: a) seeds, spores and pollen (including pollinia); b) seedling or tissue cultures obtained <i>in vitro</i> , in solid or liquid media, transported in sterile containers c) cut flowers of artificially propagated plants; and d) fruits and parts and derivatives thereof of artificially propagated plants of the genus <i>Vanilla</i> .	#8, #1

B. Proponent

Switzerland, as Depository Government, at the request of the Plants Committee.

C. Supporting statement

1. Taxonomy

1.1 Class:

1.2 Order:

1.3 Family:

Taxon	Family	Order	Class
<i>Adonis vernalis</i>	Ranunculaceae	Ranunculales	Magnoliopsida
<i>Guaiaacum spp.</i>	Zygophyllaceae	Sapindales	Magnoliopsida
<i>Hydrastis canadensis</i>	Ranunculaceae	Ranunculales	Magnoliopsida
<i>Nardostachys grandiflora</i>	Valerianaceae	Dipsacales	Magnoliopsida
<i>Panax ginseng</i> , <i>Panax quinquefolius</i>	Araliaceae	Apiales	Magnoliopsida
<i>Picrorhiza kurrooa</i>	Scrophulariaceae	Scrophulariales	Magnoliopsida
<i>Podophyllum hexandrum</i>	Berberidaceae	Ranunculales	Magnoliopsida
<i>Pterocarpus santalinus</i>	Leguminosae	Fabales	Magnoliopsida
<i>Rauvolfia serpentina</i>	Apocynaceae	Gentianales	Magnoliopsida
<i>Taxus chinensis</i> , <i>T. fuana</i> , <i>T. cuspidata</i> , <i>T. sumatrana</i> , <i>T. wallichiana</i>	Taxaceae	Pinales	Pinopsida
All App II taxa annotated with #1	various	various	various

1.4 Genus, species or subspecies, including author and year (LANGE & SCHIPPMANN, 1999; LANGE & al., in press; DAVILA ARANDA & SCHIPPMANN 2006):

Adonis vernalis L. 1753
Guaiaacum angustifolium Englem. in Wislizenus 1848
Guaiaacum coulteri A. Gray 1855
Guaiaacum officinale L. 1753
Guaiaacum sanctum L. 1753
Guaiaacum unijugum T.S. Brandegee 1915
Hydrastis canadensis L. 1759
Nardostachys grandiflora DC. 1894
Panax ginseng C.A. Meyer 1842
Panax quinquefolius L. 1753
Picrorhiza kurrooa Royle ex Benth. 1835
Podophyllum hexandrum Royle 1834
Pterocarpus santalinus L. f. 1781
Rauvolfia serpentina (L.) Bentham ex Kurz 1877
Taxus chinensis (Pilger) Rehder 1919
Taxus cuspidata Siebold & Zuccarni 1846
Taxus fuana Nan Li & R.R. Mill 1997
Taxus sumatrana (Miquel) de Laubenfels 1978
Taxus wallichiana Zucc. 1843

1.5 Scientific synonyms (LANGE & SCHIPPMANN, 1999; LANGE & al., in press; DAVILA ARANDA & SCHIPPMANN 2006):

<i>Adonis vernalis</i>	<i>Adonanthe vernalis</i> Spach., <i>Adoniastrum vernale</i> Schur, <i>Adonis apennina</i> Jacq., <i>Adonis apennina</i> L., <i>Adonis davurica</i> Reichb., <i>Adonis helleborus</i> Crantz, <i>Adonis ircuitiana</i> Fisch., <i>Adonis parviflora</i> Janka
<i>Guaiacum angustifolium</i>	<i>Porliera angustifolia</i> Engelm.
<i>Guaiacum coulteri</i>	<i>Guaiacum palmeri</i> Vail, <i>Guaiacum parvifolium</i> Planch. ex A.Gray, <i>Guaiacum planchonii</i> Gray ex Vail and Rydberg, <i>Guaiacum bijugum</i> Stokes, <i>Guaiacum guatemalense</i> Planch. ex Hemsl., <i>Guaiacum multijugum</i> Stokes, <i>Guaiacum sloanei</i> Shuttl. ex A.Gray, <i>Guaiacum verticale</i> Ortega
<i>Hydrastis canadensis</i>	<i>Warneria canadensis</i>
<i>Nardostachys grandiflora</i>	<i>Fedia grandiflora</i> Wall., <i>Nardostachys chinensis</i> Batalin, <i>Nardostachys gracilis</i> Kitamura, <i>Nardostachys jatamansi</i> (D.Don) DC., <i>Nardostachys jatamansi</i> DC., <i>Patrinia jatamansi</i> D. Don, <i>Valeriana jatamansi</i> auct. non Jones
<i>Panax ginseng</i>	<i>Aralia ginseng</i> (C.A. Mey.) Baill., <i>Aralia ginseng</i> Baill., <i>Panax pseudoginseng</i> Wallich, <i>Panax quinquefolium</i> var. <i>ginseng</i> Regel & Maxim., <i>Panax schinseng</i> Nees.
<i>Panax quinquefolius</i>	<i>Aralia canadensis</i> Tourn., <i>Aralia quinquefolia</i> Decne. & Planch., <i>Aureliana canadensis</i> Lafit., <i>Ginseng quinquefolium</i> Wood., <i>Panax americanum</i> Raf.
<i>Picrorhiza kurrooa</i>	<i>Picrorhiza kurroa</i> Royle ex Bentham, <i>Picrorhiza lindleyana</i> (Wall.) Steud., <i>Veronica lindleyana</i> Wall.
<i>Podophyllum hexandrum</i>	<i>Podophyllum emodi</i> var. <i>hexandrum</i> (Royle) Chatterjee & Mukerjee, <i>Podophyllum emodi</i> Wall. ex Hook.f. & Thoms., <i>Sinopodophyllum emodi</i> (Wall. ex Honigberger) T.S. Ying, <i>Sinopodophyllum hexandrum</i> (Wall. ex Royle) T.S.Ying, <i>Lingoum santalinum</i> (L.f.) Kuntze
<i>Rauvolfia serpentina</i>	<i>Ophioxylon album</i> Gaertn., <i>Ophioxylon obversum</i> Miq., <i>Ophioxylon salutiferum</i> Salisb., <i>Ophioxylon serpentinum</i> L., <i>Ophioxylon trifoliatum</i> Gaertn., <i>Rauvolfia obversa</i> (Miq.) Baill., <i>Rauvolfia trifoliata</i> (Gaertn.) Baill.
<i>Taxus wallichiana</i>	<i>Taxus baccata</i> L. subsp. <i>wallichiana</i> (Zucc.) Pilg., <i>Taxus chinensis</i> var. <i>yunnanensis</i> (W.C. Cheng & L.K. Fu) L.K. Fu, <i>Taxus contorta</i> Griff., <i>Taxus nucifera</i> Wall. non L., <i>Taxus orientalis</i> Bertol., <i>Taxus wallichiana</i> subsp. <i>yunnanensis</i> (W.C. Cheng & L.K.Fu) C.T.Kuan, <i>Taxus yunnanensis</i> W.C. Cheng & L.K.Fu

1.6 Common names (Lange & Schippmann 1999; Lange et al. in press):

Taxon	English	French	Spanish
<i>Adonis vernalis</i>	False helebore, Herb of Lynchis, Herb of spring Adonis, Ox-Eye, Pheasants eye, Spring Adonis, Spring pheasants eye, Yellow Adonis, Yellow Pheasant's-eye	Adonide, Adonide du printemps, Adonis du printemps, Goutte de sang, Grand oeil de boeuf, Hellébore batard, Herb d'Adonide	Adonis de primavera, Adonis vernal, Eléboro falso, Flor de Adonis, Ojo de Perdiz, Parte aérea de adonis, Yerba de Adonis
<i>Guaiacum officinale</i>	Commoner lignum-vitae, Guaiac, Guaiacum, Guaiacum resin, Guaiacum wood, Guayac, Gum Guaiacum, Lignum vitae, Pockwood, Tree of life, Wood of life	Bois de Gaiac, Bois de vie, Bois saint, Écorce de gayac, Gaiac, Gaiac mâle, Gaiac officinal, Gayac, Résine de Gaiac, Résine de Gayac	Guajacum, Guayacan, Guayacán genuino, Guayacán negro, Guayacén, Guayaco, Leño de guayaco, Palo santo
<i>Guaiacum sanctum</i>	Brazil wood, Commoner lignum-vitae, Guaiac wood bark, Guaiacum resin, Guaiacum wood, gum guaiacum, Holywood, Lignum vitae, Pockwood, Tree of life, Wood of life	Bois de Gaiac, Bois Saint, Gaiac, Gayac, Resin de Gaiac, Resina de Guayaco	Guajacum, Guayacan, Guayacén, Guayaco, Leño de guayaco, Palo santo
<i>Hydrastis canadensis</i>	Eye balm, Eye-root, Golden Seal, Goldenseal root, Ground Raspberry, Indian dye, Indian paint, Indian Turmeric, Jaundiceroot, Ohio curcuma, Orange root, Turmeric root, Wild curcuma, Wild turmeric, Yellow eye root, Yellow Indian Paint, Yellow Puccoon, Yellow root, Yellow Seal	Fard inolien, Hydraste canadien, Hydrastis du Canada, Racirie jaunisse, Sceau d'or	Hidrastis, Raiz de hidrastis, Raíz de oro, Sello dorado
<i>Nardostachys grandiflora</i>	Indian nard, Indian Spikenard, Indian Valerian, Jatamansi, Jatamansi root, Musk-root	Nard indien, Spicanard	Espica-nardo, Nardo indico
<i>Panax ginseng</i>	Asian ginseng, Chinese ginseng, Chinese ginseng root, Five leaved Panax root	Ginseng, Mandragore coréenne, Racine de ginseng, Racine de ginseng chinois	Raiz de ginseng
<i>Panax quinquefolius</i>	American Ginseng, Canadian Ginseng, Dwarf-Groundroot, Man's Health, Occidental Ginseng	Ginseng, Ginseng à cinq folioles, Ginseng d'Amérique	
<i>Picrorhiza kurrooa</i>	Barbarian yellow link, Indian Gentian		
<i>Podophyllum hexandrum</i>	Chinese Mayapple, Himalayan Mayapple, Indian Mandrake, Podophyllum resin, Resin of Podophyllum	Podophylle indien, Pomme de mai, Resine de Podophylle	
<i>Pterocarpus santalinus</i>	Caliatur wood tree, Red Sandalwood, Red Sanders, Sandalwood Paduak	Bois de santal rouge, Santal rouge	Leño Caliatur, Leño de sandalo rojo, Sandalia
<i>Rauwolfia serpentina</i>	Ajmaline, Indian snakeroot, Java Devil pepper, Serpent wood, Serpentina Root, Snakewood	Arbre aux serpents, Racine de rauwolfia, Racine de serpentine, Sarpaganda	Boboró, Raiz de rauwolfia
<i>Taxus chinensis</i>	Chinese yew		
<i>Taxus cuspidata</i>	Japanese yew		
<i>Taxus fuana</i>	Chinese yew		
<i>Taxus sumatrana</i>	Chinese yew		
<i>Taxus wallichiana</i>	Himalayan yew		

1.7 Code numbers: Not applicable.

2. Overview

The trade in medicinal plants consists of a large variety of commodities which range from raw plant material, such as root or bark to processed commodities such as extracts or finished pharmaceutical drugs.

Since 1975, a total of 64 species have been included in Appendix I or II specifically due to over-exploitation for medicinal purposes. The majority of these species were included in the 1990s. Other medicinal species are included in Appendix II through the listing of whole genera and families (examples: *Aloe ferox* through *Aloe* spp.; *Dendrobium nobile* through Orchidaceae spp.).

Most of the plant species included in Appendix II and III are accompanied by an annotation of the #-series. These annotations have been developed to specify the parts and derivatives that are included in the Appendices in addition to living or dead specimens (Art. I b iii). While trade for horticultural purposes is mostly in live specimens, the medicinal trade is often in plant parts, plant biomass, or in processed material. Annotations #2, #3, #7, #9, and #10 have been developed to define which parts and derivatives of medicinal plant species are subject to the provisions of the Convention.

Many years of experience with CITES implementation have shown that a revision of these annotations is needed for several reasons:

1. Annotations do not adequately reflect the current commodities in international trade and its relative impact on the wild populations.
2. Consistent trade reporting for CITES species is increasingly difficult due to the quantity of parts and derivatives subject to CITES controls.
3. The current annotations include several ambiguous terms, such as "broken material", "chemical derivative", "extract", and "finished pharmaceutical product" which make it difficult for implementation officers to understand which commodities are actually protected under CITES.

At the 12th meeting of the Conference of the Parties (CoP12; Santiago, 2002), Parties decided: "*The Plants Committee shall consider the annotations in Appendices I and II relating to species of plants used for medicinal purposes and shall make recommendations to clarify the annotations, for consideration at the 13th meeting of the Conference of the Parties*" [Decision 11.118 (Rev. CoP12)]. The document PC14 Inf. 3 was prepared by the IUCN/SSC Medicinal Plant Specialist Group and was approved by the 14th meeting of the Plants Committee in 2004¹. The report of the PC, Doc. 58², was approved at CoP13 in Bangkok.

At the 13th meeting of the Conference of the Parties (CoP13; Bangkok, 2004), the Parties adopted Decisions 13.50 to 13.52, which directed the Plants Committee to review existing annotations for CITES-listed medicinal plant species as follows³:

Decision 13.50 *The Plants Committee shall prepare amendments to annotations for medicinal plants included in Appendix II that adequately reflect the current commodities in international trade and their relative impact on the wild populations in range States.*

¹ www.cites.org/common/com/PC/14/X-PC14-03-Inf.pdf, all URLs in this doc. accessed 17.11.2006.

² www.cites.org/eng/cop/13/doc/E13-58.pdf

³ www.cites.org/eng/dec/valid13/13-50_53.shtml

Decision 13.51 *The amended annotations shall focus on those commodities that first appear in international trade as exports from range States and on those that dominate the trade and the demand for the wild resource.*

Decision 13.52 *The Plants Committee shall draft proposals to amend the Appendices in this respect for the Depositary Government to present for consideration at the 14th meeting of the Conference of the Parties.*

The proposed changes included in this amendment proposal have been agreed by the Plants Committee at its 16th meeting in July 2006 (PC 16; Lima). The proposed changes achieve the following objectives:

1. They implement Decisions 13.51 – 13.53.
2. They adequately reflect the current commodities in international trade.
3. They restrict CITES controls to those parts, derivatives, or commodities which need to be monitored in order to adequately regulate international trade.
4. The wording is clear and simple and avoids ambiguous terms.
5. The terms used are clearly defined.
6. Some of the annotations provide useful templates for annotations for future listing.

Table 2 provides a rationale for the proposed changes to the annotations. Table 3 lists the current annotations with the proposed changes. Table 4 provides a glossary with definitions of the terms used in the proposed annotations.

3. Species characteristics

3.1 Distribution

<i>Adonis vernalis</i>	Austria, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Hungary, Italy, Kazakhstan, Netherlands, Poland, Romania, Russian Federation, Slovakia, Spain, Sweden, Switzerland, Ukraine, Yugoslavia
<i>Guaiacum angustifolium</i>	Mexico, United States of America
<i>Guaiacum coulteri</i>	Guatemala, Mexico, United States of America
<i>Guaiacum officinale</i>	Anguilla, Antigua and Barbuda, Bahamas, Barbados, Colombia, Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Montserrat, Netherlands Antilles, Panama, Puerto Rico, Saint Vincent and the Grenadines, Turks and Caicos Islands, Venezuela, Virgin Islands, British, Virgin Islands, United States of America
<i>Guaiacum sanctum</i>	Bahamas, Belize, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, United States of America
<i>Guaiacum unijugum</i>	Mexico
<i>Hydrastis canadensis</i>	Canada, United States of America
<i>Nardostachys grandiflora</i>	Afghanistan, Bhutan, China, India, Myanmar, Nepal, Pakistan
<i>Panax ginseng</i>	China, India, Korea, Democratic People's Republic of, Korea, Republic of, Nepal, Russian Federation
<i>Panax quinquefolius</i>	Canada, United States of America
<i>Picrorhiza kurrooa</i>	Bhutan, China, India, Nepal, Pakistan
<i>Podophyllum hexandrum</i>	Afghanistan, Bhutan, China, India, Nepal, Pakistan, Taiwan
<i>Pterocarpus santalinus</i>	India

<i>Rauvolfia serpentina</i>	Bangladesh, Bhutan, China, India, Indonesia, Lao, Malaysia, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand, Viet Nam
<i>Taxus chinensis</i>	China
<i>Taxus cuspidata</i>	China
<i>Taxus fuana</i>	China
<i>T. sumatrana</i>	Philippines and Indonesia (Sulawesi and Sumatera)
<i>Taxus wallichiana</i>	Afghanistan, Bhutan, China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Viet Nam

3.2 Habitat

Not applicable.

3.3 Biological characteristics

Not applicable.

3.4 Morphological characteristics

Not applicable.

3.5 Role of the species in its ecosystem

Not applicable.

4. Status and trends

Not applicable.

5. Threats

Not applicable.

6. Utilization and trade

The trade in medicinal plants consists of a large variety of commodities which range from raw plant material, such as root or bark to processed commodities such as extracts or finished pharmaceutical products packaged for retail sale. The analysis of existing CITES Annual Report data for the medicinal species provides an overview of commodities that dominate the trade and those that are not widely traded (a summary of trade data from 1975-2002 is included in PC14 Inf. 3⁴).

***Taxus chinensis*, *T. fuana*, *T. cuspidata*, *T. sumatrana*, and *T. wallichiana*:** The chemical derivative or extract (e.g., crude, semi-purified and active pharmaceutical ingredient) is the commodity of *Taxus* species actually exported, rather than plant biomass. However, at the 11th meeting of the Conference of the Parties (CoP11; Gigiri, 2000) "chemical derivatives and finished pharmaceutical products" were exempted from CITES controls. In 2004, at CoP13 (Bangkok, 2004), the existing annotation was greatly improved when the Parties adopted four additional species of *Taxus* (*Taxus chinensis*, *T. fuana*, *T. cuspidata*, *T. sumatrana*) and a new annotation (#10) to include all parts and derivatives but excluded finished pharmaceutical products.

Delegates from China and the United States at the 15th meeting of the Plants Committee (PC15; Geneva, 2005), the proponent Parties for the four *Taxus* species adopted at CoP13 and its current annotation #10, stated that the intention of the annotation was to exclude the retail trade of packaged medicines from CITES controls. At the meeting, it was determined that the term "finished

⁴ www.cites.org/common/com/PC/14/X-PC14-03-Inf.pdf

pharmaceutical products" was too ambiguous and a possible means to circumvent CITES controls. The proposed revision of #10 will amend this annotation with the phrase "packaged and ready for retail trade". The revised annotation #10 (see table 3) was supported by the plenary of PC16 and was found appropriate to apply to other CITES-listed taxa such as those currently annotated with annotations #2 and #3, except for ginseng and goldenseal, as shown in Table 2.

Adonis vernalis: Trade is mainly in the dried, whole or cut herb, sometimes also in the powdered herb. With annotation #2 the relevant trade is covered by CITES controls. Annotation #10rev. serves the same purpose.

***Guaiacum* spp.**: Mainly timber and pieces of heartwood are in trade. The products of *Guaiacum* advertised in trade, such as on the Internet and in company brochures, include wood, bark, resin powder, fluid extract and tinctures. Germany annually imports up to 40 tons of heartwood resin and wood chips as aromatic substances for use in the liqueur industry. Resin of the heartwood of *G. coulteri* is also imported to the United States to be used in diagnostic kits for detecting hidden gastrointestinal bleeding; However, verification of the nature and extent of international trade in specimens of *Guaiacum* for medicinal products has proved to be very difficult. It remains unclear where the processing of medicinal products takes place and which commodities constitute the international trade beyond timber.

With annotation #2, the trade in resin and oil is excluded from CITES controls. It has been recommended that the regulation of commodities such as oils and resins should be considered as there is apparently demand for these in international market (P. Davila, Scientific Authority Mexico, pers. comm. 26.3.2004). Therefore, Annotation #10rev. is proposed for these species.

Hydrastis canadensis: Powder is a main commodity of this species in trade, in addition to rhizomes and roots. This is based on information from Canada, the United States, international traders, and the herbal products industry, as well as on the abundant availability of powder for sale on the Internet. Industry experts also indicate that companies are grinding roots into powder and avoiding CITES controls making it difficult to accurately gauge international trade in raw material of this species. *Hydrastis canadensis* powder primarily consists of ground-up rhizomes and roots, along with leaves and stems in some cases. Therefore, to regulate this commodity in trade, a new annotation is proposed for *H. canadensis* which includes powder: "Designates underground parts (i.e. roots, rhizomes): whole, parts and powdered".

Nardostachys grandiflora: The main commodities in international trade are unprocessed rhizomes, with smaller amounts of trade in processed products such as oil. Quantitative information on trade volumes is limited, however, much of the trade is apparently unregulated and/or occurring outside established trade controls, and therefore undocumented. With annotation #3, CITES permits are only requested for the trade in whole and sliced or parts of 'roots'. As a result, oil and powder are excluded from CITES controls. In recent years, the technology used to produce essential oils was introduced in Nepal, which has led to an increase in local production of and trade in "Jatamansi oil". The proposed annotation #10rev. will include these commodities in CITES controls. Oil appears to be a significant product, as well as a commodity, that first appears in international trade as exports from range States.

Panax ginseng*, *P. quinquefolius: Mainly dried, whole roots are in trade, also to some extent powdered roots and fresh roots. This spectrum of trade commodities is adequately covered by the existing annotation #3. The focus of CITES controls on roots and parts of roots was found to be appropriate and the first part of #3 to be well phrased. However, it was agreed that the annotation would be improved by deleting the second part of the annotation after the comma, which lists a number of undefined terms while not adding relevant substance. The proposed #3rev. positively defines what is included in CITES controls.

Picrorhiza kurroa: The main trade commodity is the unprocessed rhizome, with smaller amounts of trade in processed products such as oil. Quantitative information on trade volumes is limited, as much of the trade is apparently unregulated, and therefore, undocumented. With annotation #3, extract and oil are excluded from CITES controls. Given that the vast majority of international trade appears to involve unprocessed rhizomes, the current annotation seems generally appropriate.

However, annotation #3, which designates whole and sliced roots and parts of roots, does not explicitly include rhizomes. Therefore, proposed annotation #10rev., which designates all parts, positively defines what is included in CITES controls.

Podophyllum hexandrum: This species was selected for review under the Significant Trade process, but was later removed. No information was available for discussion at PC15. Further inquiries with Indian plant experts have not yielded additional data. In this case, it is proposed to use annotation #10rev. for this species.

Pterocarpus santalinus: This tree species native to India, is in demand as a high quality timber, a source of dyes and, less importantly, for other uses such as incense. The colorant is extracted from the heartwood which is first reduced to chips or powder, and the colorant is then extracted. The international trade of *Pterocarpus santalinus* involves many tens if not hundreds of tonnes of wood, wood chips and powder each year. Legal export of wild-sourced material is limited to value-added products, (i.e. other than timber). It has been imported into Germany in the form of powder or as an extract (i.e. oleoresin). With the exception of seizures of timber, CITES implementation in the species appears to be non-existent. However, even if the current listing was implemented, the exclusion of extracts in accordance with annotation #7 would mean that a significant proportion of the trade in powder would be outside of CITES controls. At PC15, it was agreed that trade in powder and extract should be covered by CITES controls. It was also agreed that finished products such as furniture and musical instruments should stay exempt from CITES controls. Therefore, it is proposed to annotate this species with the revised annotation #7rev.

Rauvolfia serpentina: The plant part used and traded is the dried root. As a consequence of the ban on the export of raw material in some range States, export of alkaloids extracted from the roots has increased. The few trade records in the CITES Annual Reports for the 1990-1997 period are for 'derivatives' mainly, although they were always exempt from CITES controls. Present international trade in *Rauvolfia serpentina*, although less than in earlier decades, is still significant. Trade largely takes place in the form of extract, with India and Thailand being the main suppliers. All this is not adequately reflected by CITES monitoring because of the exemption of 'chemical derivatives' included in annotation #2. Therefore, it is proposed to annotate the species with #10rev. to regulate the commodities in trade.

Orchidaceae spp.: The current annotations #1 for general use and #8 for orchids are basically identical; they only differ in part d) which relates to the exclusion of *Vanilla* fruits. Therefore, it is proposed to move the *Vanilla* related text of #8(d) to #1 and annotate Orchidaceae ssp. in Appendix II with #1rev. By doing so, #8 is redundant, which will reduce the overall number of annotations.

7. Legal instruments

Not applicable.

8. Species management

Not applicable.

9. Information on similar species

The trade name for *Picrorhiza kurroa* is 'kutki' which is usually a mixture of *Picrorhiza kurroa* and *Neopicrorhiza scrophulariiflora* (Pennell) D.Y. Hong (syn. *P. scrophulariiflora* Pennell); the latter is not covered by CITES. As the rhizomes of the two species are morphologically similar and used for similar purposes, they are not distinguished in trade and an effective implementation of CITES for *P. kurroa* is therefore difficult.

10. Consultations

The Plants Committee has identified the need to review the annotations for medicinal plant species in the Appendices as early as 1997, and has discussed the issue at several meetings. At its 12th meeting, the Conference of the Parties (CoP12; Santiago, 2002) it was decided that the: "*The Plants Committee shall consider the annotations in Appendices I and II relating to species of plants used for*

medicinal purposes and shall make recommendations to clarify the annotations, for consideration at the 13th meeting of the Conference of the Parties" [Decision 11.118, (Rev. CoP12)]. The subsequent report of the Plants Committee, document 58⁵, was approved at CoP13 in Bangkok (2002).

The 15th meeting of the Plants Committee in 2005 (PC15; Geneva) installed an intersessional working group which has coordinated the review process since then. The Working Group consists of the PC representatives of North America and of South and Central America and the Caribbean, and the observers from Austria, Canada, China, Mexico, Switzerland, the United Kingdom, and the United States. Formal country consultations have not been undertaken.

11. Additional remarks

One shortcoming of the current annotations is that they use a number of ambiguous terms, such as "broken material", "chemical derivative", "extract", or "finished pharmaceutical product" which make it difficult for implementation officers to understand which commodities are actually protected. In the proposed revised annotations, the majority of these ambiguous terms have been avoided and replaced by clearer terms. Additionally, the Plants Committee agreed that in future all new annotations should be accompanied with a glossary in which the terms used in the annotations are clearly defined. For example, in *H. canadensis* it is the rhizome that is used medicinally although true roots arise from the rhizome, which are also used. In common parlance, a 'root' normally means the underground portion of a plant. Morphologically, however, a rhizome is an underground stem. To avoid any unnecessary confusion, it is important to include a definition for rhizome in the glossary. A glossary of current terms used in the annotations is provided in table 4).

12. References

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⁵ www.cites.org/eng/cop/13/doc/E13-58.pdf

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Table 1: Plants in Appendices II and III with Annotation #1.

Appendix II
<i>Agave victoriae-reginae</i> , <i>Aloe</i> spp., <i>Anacampseros</i> spp., <i>Aquilaria</i> spp., <i>Avonia</i> spp., <i>Beccariophoenix</i> , <i>Bowenia</i> spp., <i>Caryocar costaricense</i> , <i>Cibotium barometz</i> , <i>Cistanche deserticola</i> , <i>Cyathea</i> spp., <i>CYCADACEAE</i> spp., <i>Cyclamen</i> spp., <i>Dicksonia</i> spp., <i>DIDIEREACEAE</i> spp., <i>Dionaea muscipula</i> , <i>Dioscorea deltoidea</i> , <i>Euphorbia</i> spp., <i>Fouquieria columnaris</i> , <i>Galanthus</i> spp., <i>Gonystylus</i> spp., <i>Gyrinops</i> spp., <i>Hedychium philippinense</i> , <i>Lewisia serrata</i> , <i>Neodypsis decaryi</i> , <i>Nepenthes</i> spp., <i>Oreomunnea pterocarpa</i> , <i>Orothamnus zeyheri</i> , <i>Pachypodium</i> spp., <i>Platymiscium pleiostachyum</i> , <i>Protea odorata</i> , <i>Prunus africana</i> , <i>Sarracenia</i> spp., <i>Shortia galacifolia</i> , <i>Sternbergia</i> spp., <i>Swietenia humilis</i> , <i>Tillandsia harrisii</i> , <i>T. kammii</i> , <i>T. kautskyi</i> , <i>T. mauryana</i> , <i>T. sprengeliana</i> , <i>T. sucrei</i> , <i>T. xerographica</i> , <i>Welwitschia mirabilis</i> , <i>ZAMIACEAE</i> spp.
Appendix III
<i>Gnetum montanum</i> , <i>Magnolia liliifera</i> var. <i>obovata</i> , <i>Meconopsis regia</i> , <i>Podocarpus neriifolius</i> , <i>Tetracentron sinense</i>

Table 2: Rationale for proposed changes of annotations for medicinal plant species in App. II.

Taxon	Current Annot.	Problem	Proposed Annotation
<i>Adonis vernalis</i>	#2	Resin, extract and oil presently exempt but should be covered by controls.	#10rev.
<i>Guaiacum</i> spp.	#2	Resin and oil presently exempt but should be covered by controls.	#10rev.
<i>Hydrastis canadensis</i>	#3	Abundant availability of powder in trade but not included in CITES. Companies are powdering roots to avoid CITES controls.	New
<i>Nardostachys grandiflora</i>	#3	Oil and powder presently exempt but should be covered by controls.	#10rev.
<i>Panax ginseng</i> , <i>Panax quinquefolius</i>	#3	Existing annotation worked well, text after comma not needed.	#3rev.
<i>Picrorhiza kurrooa</i>	#3	Oil presently exempt but should be covered by controls.	#10rev.
<i>Podophyllum hexandrum</i>	#2		#10rev.
<i>Pterocarpus santalinus</i>	#7	Powder and extract should be covered by CITES controls. Furniture and musical instruments should stay exempt.	#7rev.
<i>Rauvolfia serpentina</i>	#2	Alkaloids extracted from the roots presently exempt but should be covered by controls.	#10rev.
<i>Taxus chinensis</i> , <i>T. fuana</i> , <i>T. cuspidata</i> , <i>T. sumatrana</i> , <i>T. wallichiana</i>	#10	Term "finished ... product" not precise enough.	#10rev.
Orchidaceae spp.	#8	The merging of #1 and #8 makes #8 redundant.	#1rev.

Table 3: Current and proposed revised annotations for medicinal plants

	Current version	Revised version
#1	Designates all parts and derivatives, except: a) seeds, spores and pollen (including pollinia); b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; and c) cut flowers of artificially propagated plants.	add: d) fruits and parts and derivatives thereof of artificially propagated plants of the genus <i>Vanilla</i> .
#2	Designates all parts and derivatives, except: a) seeds and pollen; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; and d) chemical derivatives and finished pharmaceutical products.	[redundant]
#3	Designates whole and sliced roots and parts of roots, excluding manufactured parts or derivatives such as powders, pills, extracts, tonics, teas and confectionery.	<i>(Panax quinquefolius, P. ginseng:)</i> Designates whole and sliced roots and parts of roots.
		<i>(Hydrastis canadensis:)</i> Designates underground parts (i.e. roots, rhizomes): whole, parts and powdered.
#7	Designates logs, wood-chips and unprocessed broken material.	Designates logs, wood-chips, powder and extracts.
#8	Designates all parts and derivatives, except: a) seeds and pollen (including pollinia); b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; and d) fruits and parts and derivatives thereof of artificially propagated plants of the genus <i>Vanilla</i> .	[redundant]
#10	Designates all parts and derivatives except: a) seeds and pollen; and b) finished pharmaceutical products.	Designates all parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade.

Table 4: Glossary of terms used in the revised annotations

Term	Definition / Explanation
Extract	A complex, multi-component mixture obtained by using a solvent, in the form of a tincture, fluid, solid, or powder.
Finished product	A preparation processed, packaged, labelled and ready for retail trade.
Log	All wood in the rough, whether or not stripped of bark or sapwood, or roughly squared, for processing, notably into sawn wood, pulpwood or veneer sheets [Explanatory note: Definition given in Resolution Conf. 10.13 and in document PC14 Doc. 7.5.2 (Rev.1) prepared by the United States. Cf. HS Code 4403.]
Powder	A dry, solid substance in the form of fine or coarse particles.
Retail trade	Sale of merchandise to the general public, for household or personal consumption.
Rhizome	Underground stem possessing buds and/or nodes.
Root	Generally the underground portion of a plant.
Underground part	Any subterranean plant part, e.g. root, rhizome, bulb, tuber, corm or caudice.
Wood-chip	A small piece broken or cut from a woody part of a plant.