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An Updated List of Endangered Philippine Plants

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The need of a conservation program for the natural resources has never been so strongly felt today in the Philippines. In view of the fact that the tropical moist forests are being destroyed currently at the rate of 21 hectares per minute (Whitmore 1980), there is nothing more timely than an accurate summary of the rare and endangered biota in a tropical country like Philippines.

On a worldwide basis, there are roughly 250,000 species of vascular plants known with at least 35,000 in Tropical Asia. Of the 250,000 plant species, 50,000 will reach threatened status or become extinct by the end of this century if no effort is exerted *NOW* to conserve or protect their natural habitats (Raven 1976). In Japan where the flora is perhaps the best studied in Asia, a recent publication of its rare and endangered flora (Numata et al. 1975) listed 24 mosses, 13 hepatics, 10 lichens, 13 fungi, over a hundred ferns and fern allies and nearly a thousand seed plants.

A recent encouraging development in Southeast Asia indicating an awakening regional determination for the conservation and protection of environment is the approval by the ASEAN countries of the "Agreement on the Conservation of Nature and Natural Resources" during a workshop-seminar held in Manila in 1982. Subsequently, each member country was asked to submit a list of its endangered biota for the official implementation of the agreement which ban or control the trading of these endangered taxa.

Whereas past listings of endangered Philippine plant species are not wanting (cf. Quisumbing 1967; CITES 1976; NSRC-MNR 1977-1986; Madulid 1982), they, owing to historical circumstances, suffer in one way or another from either basing on inconclusive data, inaccurate taxonomy or outdated secondhand information.

There is therefore a need to review the situation and to propose an updated if not better list of so-called endangered Philippine plants. In preparing the new list, we reviewed the contents of all previous lists. Our judgement relies primarily on our long years of field observation, especially in the groups of plants where our individual taxonomic expertise and interest lie.

The present list does not pretend to be authoritative and final. Any valid conclusion about endangered plants can come only after an extensive and intensive field survey is conducted across

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the country. The difficulty and magnitude of such a scientific undertaking require many years of continued research and funding support from the local as well as the national government. As such, the present list is to be viewed as the latest synthesis evolved in the light of new knowledge on the Philippine flora.

There are some fundamental differences, though, between our list and its predecessors. First, the list is relatively conservative in its reflection on the state of endangered Philippine flora. Included here are those that are most certainly endangered. Several plant groups such as the algae, fungi and lichens with which none of us are familiar are excluded.

Secondly, species of doubtful or controversial taxonomic status are ignored tentatively. Such is the case of *Cycas wadei* Merr., *C. chamberlainii* Brown & Kienholtz and *Nepenthes burkei* Mast. Many of them are insufficiently described on the basis of a single specimen. It is preferable to start with a small but accurate list. Future collections and revisions which will resolve the taxonomic issues may add these taxa into the list as warranted.

Thirdly, species with contradictory range resulted from published reports and our own field observations are also excluded. *Kolowratia elegans* Presl, *Hedychium philippinense* K. Schum. and *Lilium philippinense* Baker are three glaring examples. The first two are still seen in many disturbed primary forests. In the case of *L. philippinense*, the entire population in an area may disappear during the dry months only to reappear in great quantity towards the end of the rainy season. This goes to show the importance of field collection trips made during the rainy months of the year.

Since our guiding criterion has been to include only species of definitive endangered status, we have avoided the use of vague and sweeping phrases such as "all orchids" or "*Nepenthes* spp.". To our knowledge, *Nepenthes alata* Blanco (the common pitcher plant) is not facing extinction yet. The plant, nevertheless, deserves protection owing to its unique biological adaptation to a secondary insectivorous mode of nutrition. Similarly, not all wild species of Philippine orchids are threatened with destruction of their natural environment. Only where a genus or a group of related species are seriously found to be threatened is the situation indicated by "spp." as in the case of the local *Sphagnum*.

Fourthly, this is the first list of endangered species of Philippine plants produced jointly by a group of taxonomists.

The endangered Philippine plants are listed below by their scientific names followed by a widely accepted common name where appropriate. They are grouped into three categories following the definition provided in the Red Data Book Guide (1980):

Category A. (Immediately) endangered species. These are species with only a small population struggling to survive in an embattled habitat. Their number of individuals is so critically low that a breeding collapse may become a possibility whether or not they are threatened by man.

Category B. Vulnerable and potentially threatened species. These are species whose populations are decreasing because of continued destruction of habitats or heavy depletion of wild stocks for commercial purposes.

Category C. Rare species. These are known to have limited geographical range such as a single locality or a highly specialized habitat that may or may not be threatened at the moment.

Needless to emphasize, members of the first category demand immediate and full protection from the government either in the form of legislation or a well coordinated community action program. Their collection and trade should be totally banned.

On the other hand, many species included in the second category have commercial value.

Their collection and trade should be strictly monitored and regulated by government institutions. Together with members of the third category, their survival depends much on the conservation of their natural habitats. Inasmuch as most of the locally endangered plant species are indigenous components of the primary forest, it becomes an urgent task to save the remaining virgin forests in the country.

Philippine endemics are not automatically included in the present list. In reality, many are widespread and abundantly represented on several large islands. Their exclusion, however, should not be taken to indicate that they enjoy a safe haven within the country. Those endemics that are truly endangered are preceded with an asterisk (*). Their survival is the great responsibility of the nation to the world.

Today, the foremost stark reality confronting the Philippine conservation program is the unceasing expansion of human populations coupled with the unmitigated destructive activities such as logging and pollution, which in turn, have threatened the very existence of the ecosystem itself on which the life and future of the nation is founded.

In publicizing the list, we call on our colleagues who are taxonomic authorities in other plant groups to help improve and complete the list of endangered Philippine plants. Now is the time to reassess the situation with a more critical mind. The next step is to launch an all out campaign to educate the general public and to save the plants from extinction.

Partial List of Endangered Philippine Plant Species

Category A. (Immediately) Endangered Species

Angiosperms: 1. **Rafflesia manillana* Teschem. - - - - "Malaboo"; 2. **Tectona philippinensis* Benth. et Hook. f. - - - - "Philippine Teak".

Pteridophytes: 1. **Isoetes philippinensis* Merr. & Perry; 2. **Podosorus angustatus* Holtt.

Mosses: 1. *Buxbaumia javanica* C. Muell.

Category B. Vulnerable or Potentially Threatened Species

Angiosperms: 1. *Albizia acle* (Blanco) Merr. - - - - "Akle"; 2. **Alocasia sandariana* Ball.; 3. **A. zebrina* C. Kock. et Veitch.; 4. **Ardisia philippinensis* A. DC. -- "Mulang"; 5. **Areca ipot* Becc. - - - - "Bunga Ipot"; 6. **A. parens* Becc. - - - - "Takobto"; 7. **Calamus merrillii* Becc. - - - - "Palasan" 8. **Cinnamomum mindanaense* Elmer - - - - "Mindanao Cinnamon" 9. **Diospyros blancoi* DC. - - - - "Kamagong, Mabolo"; 10. *Dracontomelon dao* (Blanco) Merr. & Rolfe - - - - "Dao"; 11. **D. edule* (Blanco) Skeels - - - - "Lamio"; 12. *Glenniea philippinensis* (Radlk.) Leenh. - - - - "Mamoko"; 13. **Medinilla magnifica* Lindl. - - - - "Kapa-kapa"; 14. **Phoenix hanceana* Naud. var. *philippinensis* Becc. - - - - "Voiavoi"; 15. **Strongylodon macrobotrys* A. Gray. - - - - "Jade Vine"; 16. **Toona calantas* Merr. - - - - "Kalantas"; 17. **Vanda sandariana* Reich. f. - - - - "Waling-waling"; 18. **Vanilla calopogon* Reich. f.; 19. **Wrightia pubescens* R. Br. subsp. *laniti* (Blanco) Ngan - - - - "Lanete".

Gymnosperms: 1. *Agathis dammara* (Lambert) Richard - - - - "Almaciga"; 2. *Podocarpus costalis*

Presl - - - - "Igem Dagat".

- Pteridophytes: 1. *Lycopodium magnusianum* Hert.; 2. *Platynerium grande* (Fee) Presl;
3. *Tmesipteris tannensis* (Spreng.) Bernh.; 4. *Schellolepis terrestris* (Copel.) Price.
Mosses: 1. *Dawsonia superba* Grev.; 2. *Orthorrhynchium elegans* (Hook. f. & Wils.) Reichdt.;
3. *Sphagnum* spp. - - - - "Peat Moss, Puting Lumot".

Category C. Rare Species

- Angiosperms: 1. **Areca camarinensis* Becc. - - - - "Mono"; 2. *Oryza granulata* Nees & Arnold;
3. *O. minulata* Presl; 4. **Plectocomia elmeri* Becc. - - - - "Ungang"; 5. **Salacca clemensiana* Becc. - - - - "Lacaubi"; 6. *Strychnos ignatii* Berg. - - - - "Katbalonga".
- Pteridophytes: 1. **Adiantum mindanaense* Copel.; 2. *Botrychium lanuginosum* Wallich.; 3. **Chingia urens* Holtt.; 4. **C. pricei* Holtt.; 5. **Cyathea binuangensis* v.A.v.R. - - - - "Tree Fern"; 6. **C. cinerea* Copel. - - - - "Tree Fern"; 7. **C. curranii* Copel. - - - - "Tree Fern"; 8. **C. latipinnula* Copel. - - - - "Tree Fern"; 9. **C. microchlamys* Holtt. - - - - "Tree Fern"; 10. *Dryopteris chrysocoma* (Christ) C. Chr.; 11. *D. polita* Rosenst.; 12. **Elaphoglossum calanasanicum* Holtt.; 13. **E. negrosensis* Holtt.; 14. **Grammitis alepidota* Price; 15. **Haplodictyum bulusanicum* Holtt.; 16. **Lycopodium halconense* Copel.; 17. *Pronephrum hosei* Holtt.; 18. **Selaginella atimonanensis* Tan & Jermy; 19. **S. pricei* Tan & Jermy; 20. *S. apoensis* Hieron.; 21. **Tapeinidium acuminatum* Kramer; 22. *Tectaria lobbii* (Hook.) Copel.
- Mosses: 1. *Bryum russulum* Broth. & Geheeb; 2. **Calyptothecium distichophyllum* Nog. & Tan; 3. *Grimmia affinis* Hornsch.; 4. **Pachyneuropsis bartlettii* (Bartr.) H. A. Miller; 5. *Tristichella glabrescens* Iwats.; 6. *Tuerckheimia angustifolia* (Saito) Zander.

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