Epiphytic Ferns of Sri Lanka: An Unexplored element of Tropical Biodiversity

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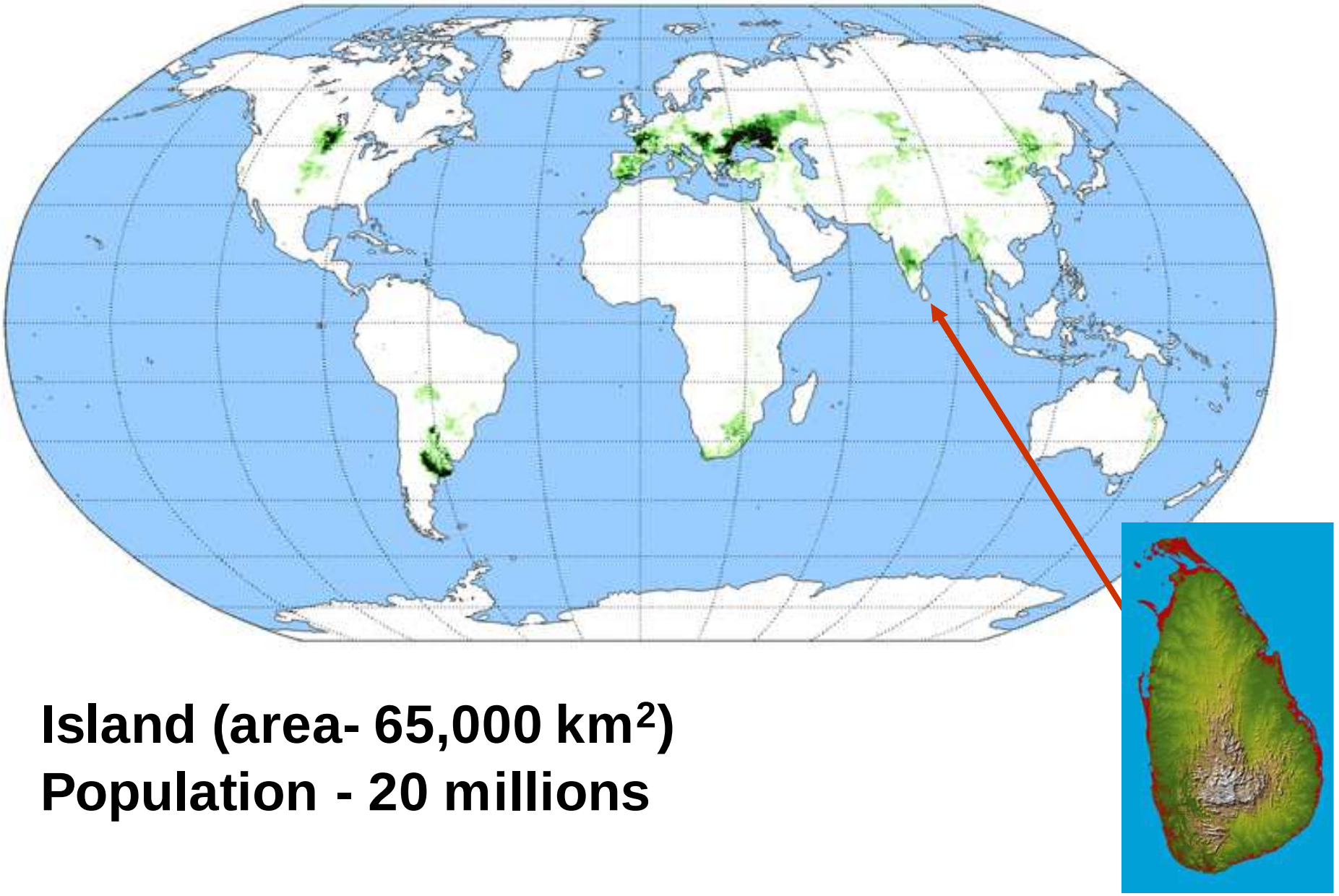
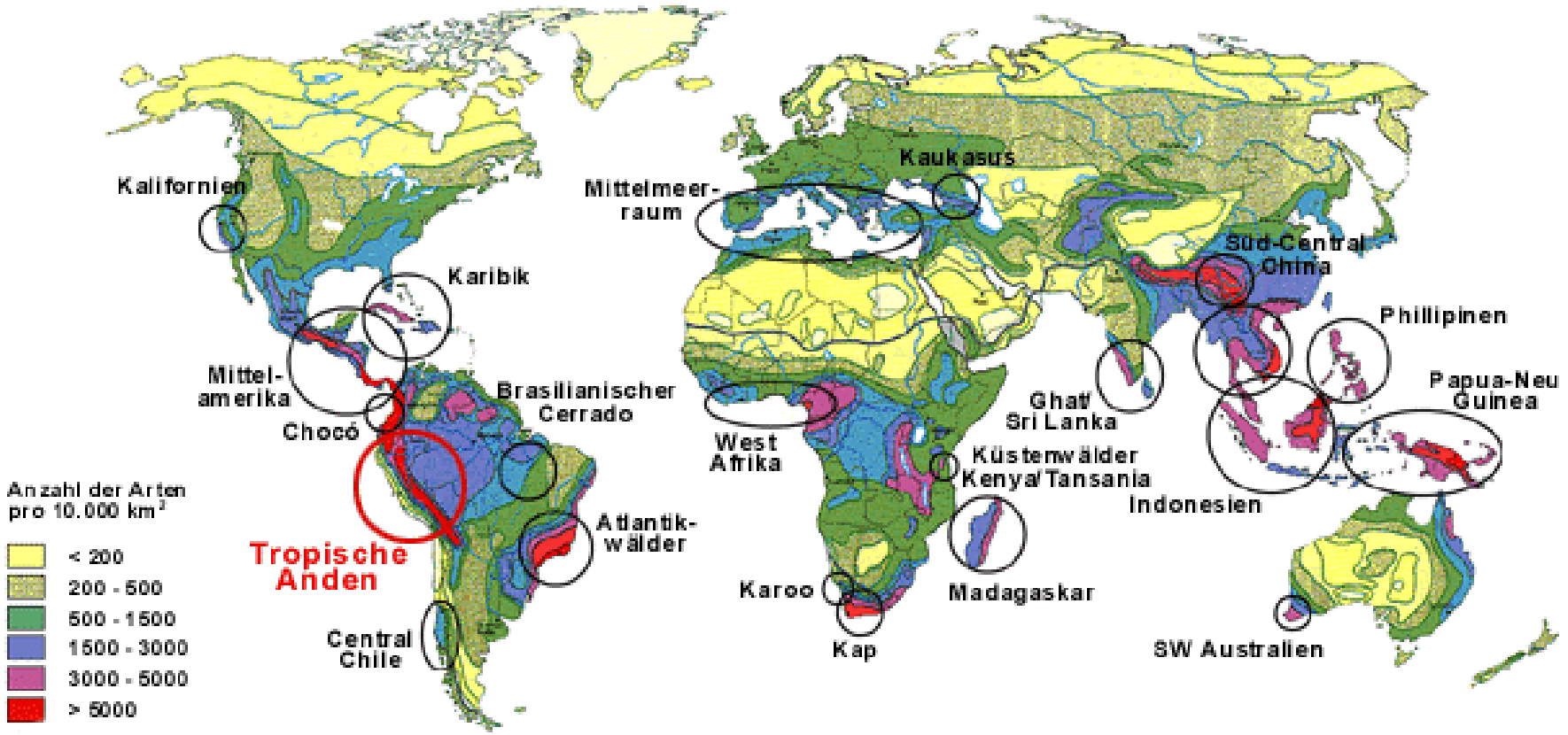
Sri Lanka……



Island (area- 65,000 km^2)
Population - 20 millions

One of the Global Biodiversity Hotspots



Pteridophyte flora of Sri Lanka

- About 360 taxa including 48 endemics
- Nearly 85% of taxa confined to the wet zone of Sri Lanka
- High degree of richness and endemism
- The island nature of the country along with its long-term biological isolation.

Conservation Status

based on herbarium specimens and limited field works

IUCN Categories	Number of Species
Critically endangered (possibly extinct) (CRp)	21
Critically endangered (CR)	40
Endangered (EN)	87
Vulnerable (VU)	71
Near Threatened (NT)	40
Least concern (LC)	63
Data deficient	12
Total	334

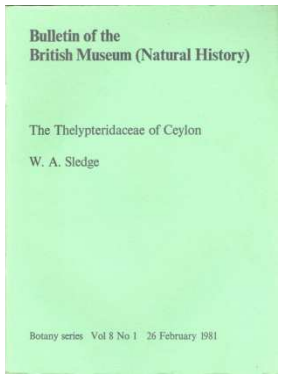
60%

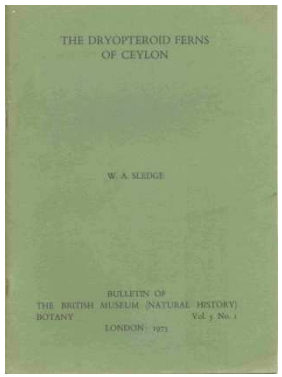
[National Redlist, 2012]

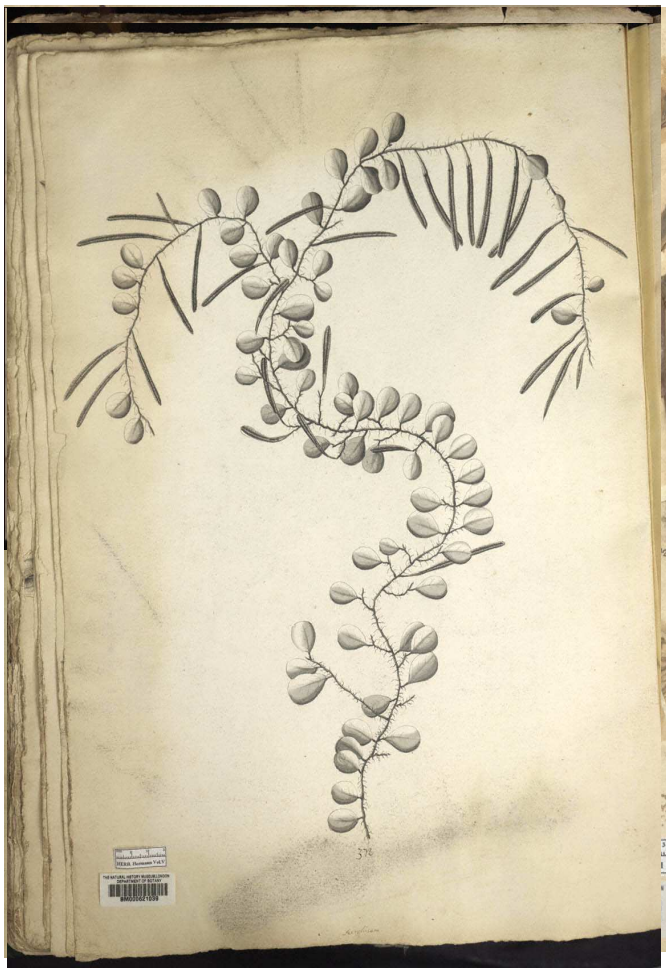
History of pteridological studies in Sri Lanka

1. Paul Hermann (1672-1677), G. Wall (?), J.I. Walker (1830-1840), W. Ferguson (?), G. Gardner (1843-1849), R.H. Beddome (1863-1883), G.H.K. Thwaites (1849-1888).

2. Prof. W. A. Sledge (1950-1982), Manton and Sledge (1953-1954).







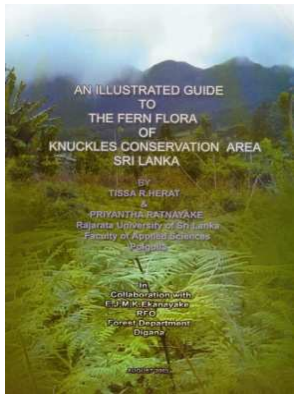
History of pteridological studies in Sri Lanka

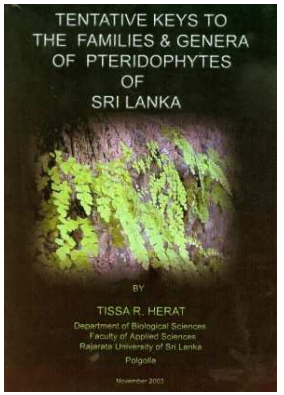
3. Local involvement - Prof. B.A. Abeywickrama (1956), Dr. P. Jayasekara, Prof. Tissa Herath, Dr. B. Fernando

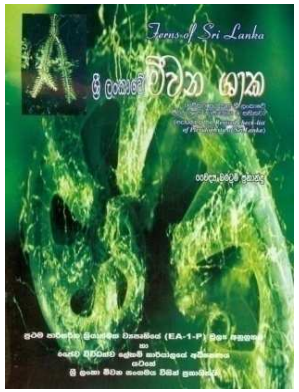
4. Since 2000……

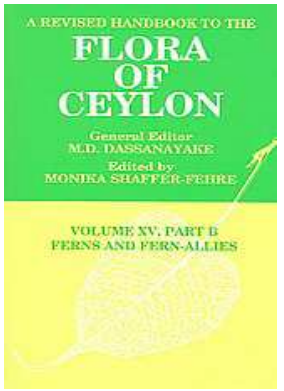
Dr. Ranil Rajapaksha
Prof. D.K.N.G. Pushpakumara
Dr. D.S.A. Wijesundara
Mr. Upali Dhanasekara

Dr. Chris Fraser Jenkins [UK]
Dr. Thomas Janssen [Germany]
Dr. Babara Parris [New Zealand]
Dr. Peter Bostock [Australia]
Dr. Atsushi Ebihara [Japan]

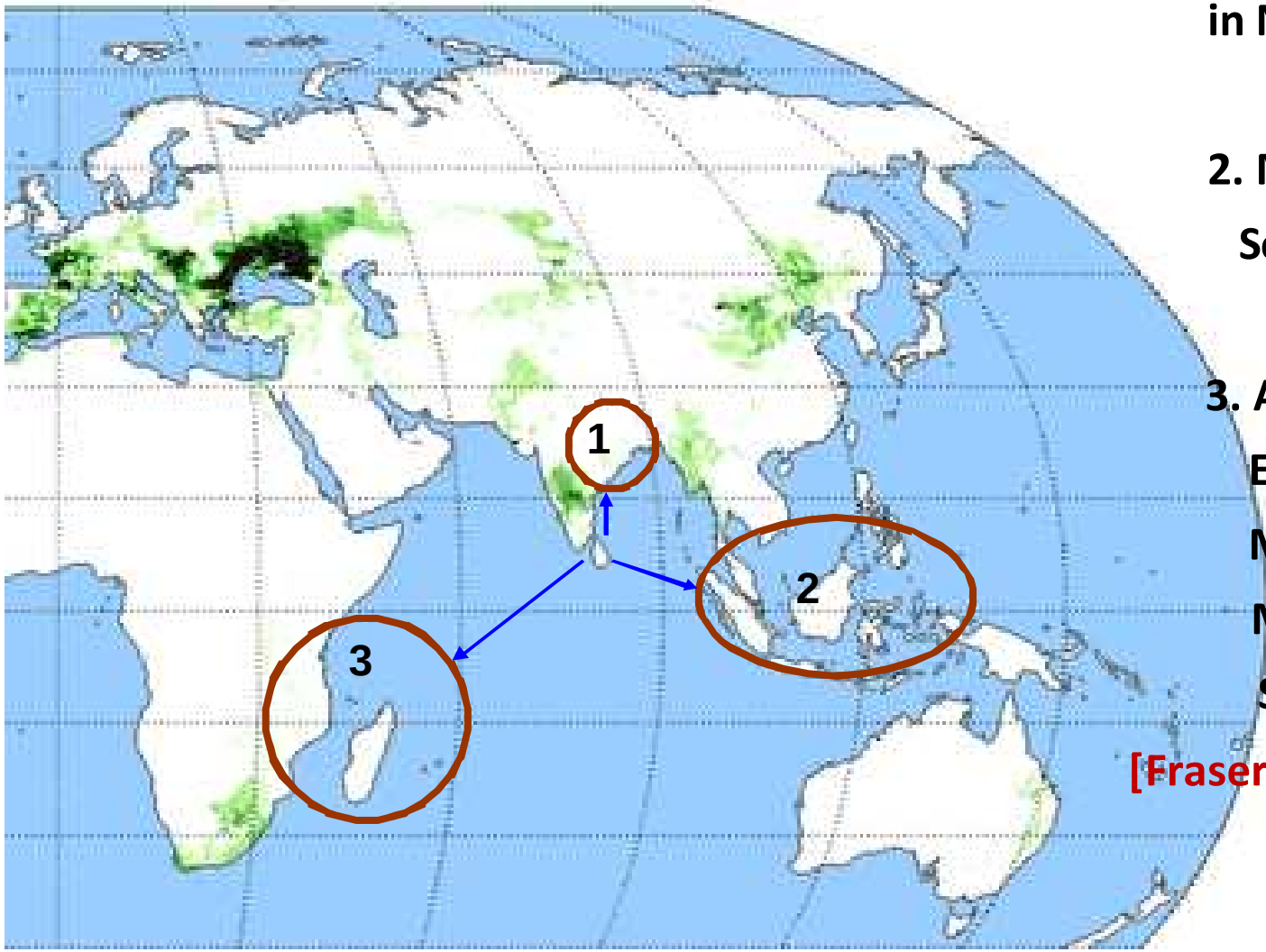








Phyto-geographical affinities of Sri Lankan pteridophyte Flora



1. Himalayan flora in North East India

2. Malesian flora in South East Asia

3. African elements in East Africa, Madagascar, Mascarenes and Seychelles

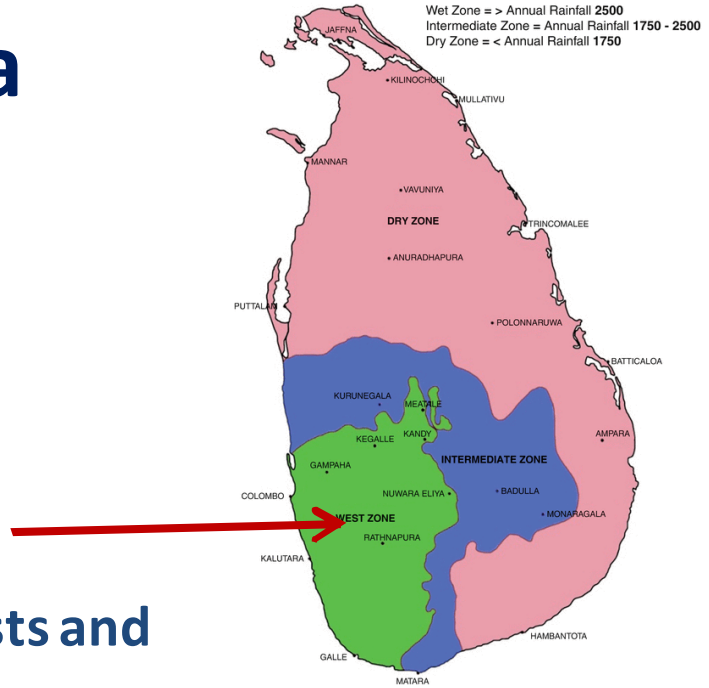
[Fraser-Jenkins, 1984]

Epiphytic ferns of Sri Lanka

- Currant status
- Importance of study
- What sort of information that we can have
- Limitations
- Future research priorities

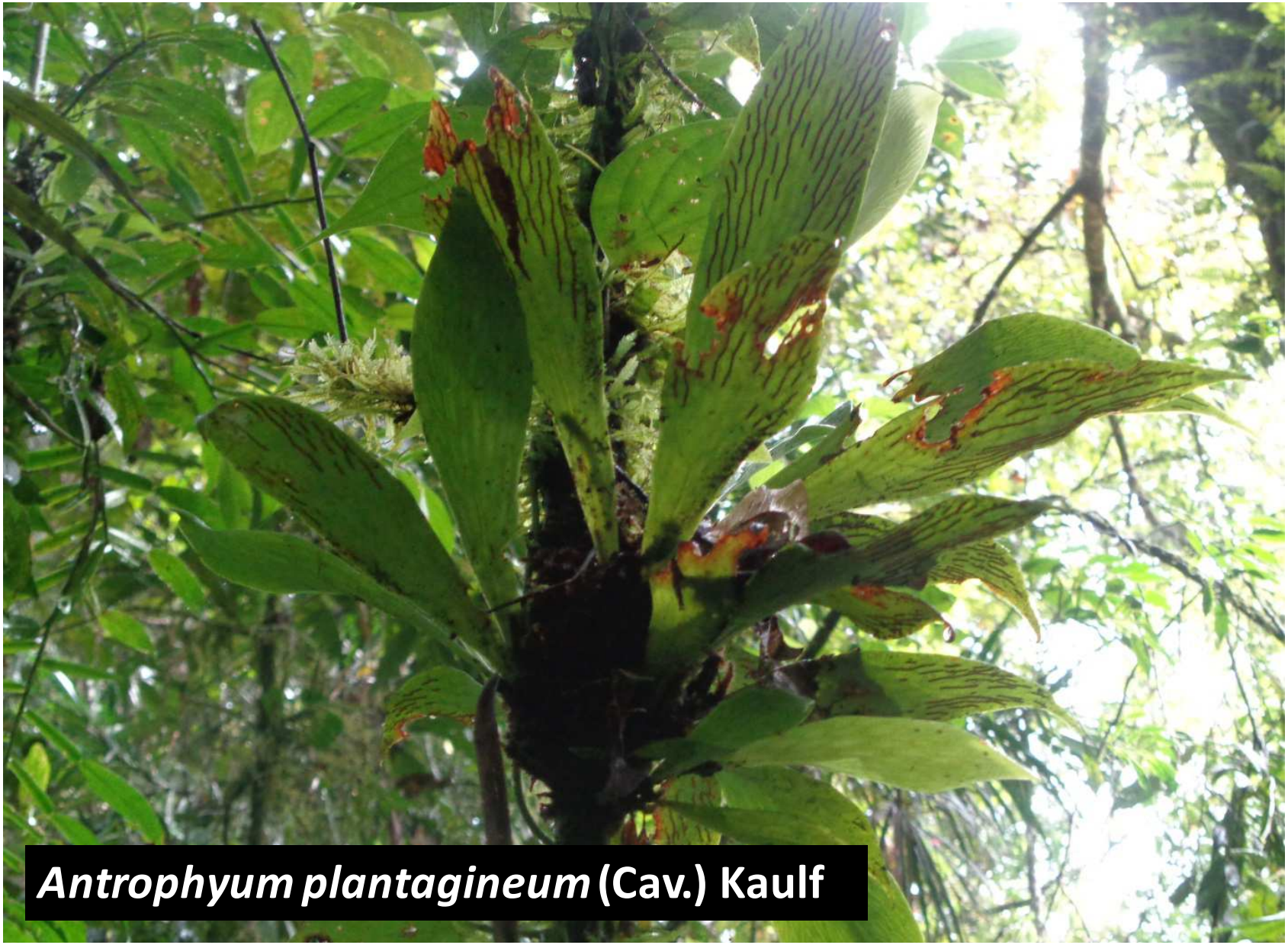
Epiphytic ferns of Sri Lanka

- **About 25% of total number**
  Aspleniaceae (28 spp),
  Polypodiaceae (46 spp.)
  Hymenophyllaceae (18 spp.)
  Davalliaceae (5 spp.)



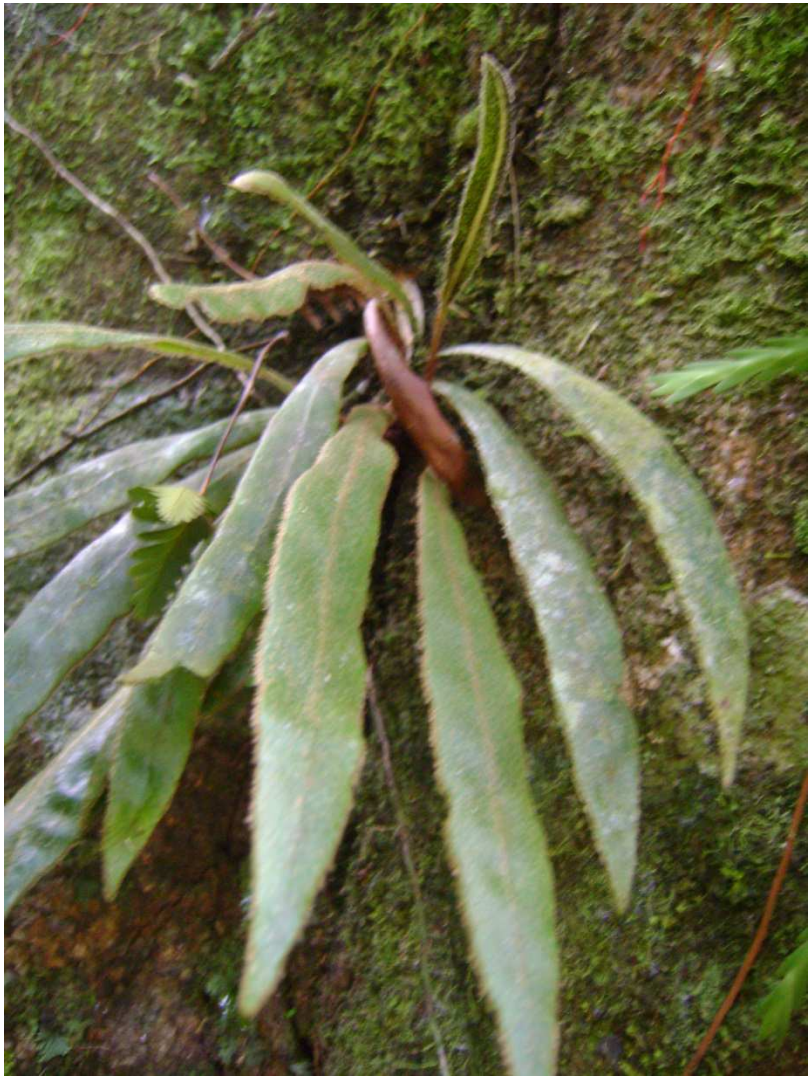
- **Basically confined to wet zone rain forests and roadside vegetation in Sri Lanka**

The most preferable and common habitats for epiphytic ferns



***Antrophyum plantagineum* (Cav.) Kaulf**

Vittaria scolopendrina (Bory) Bech.



Elaphoglossum ceylanicum
Kraina ex Sledge

Huperia phlegmaria (L.) Rothm.


Elaphoglossum commutatum (Mett. Ex Kuhn) Alderw.


Lepisorus nudus (Hook.) Ching

1. Discovery of new species

***Cyathea srilankensis* Ranil**

Cyathea sledgei* Ranil *et al.

***Prosaptia ceylanica* Parris**

Confined to the type specimen at Kew

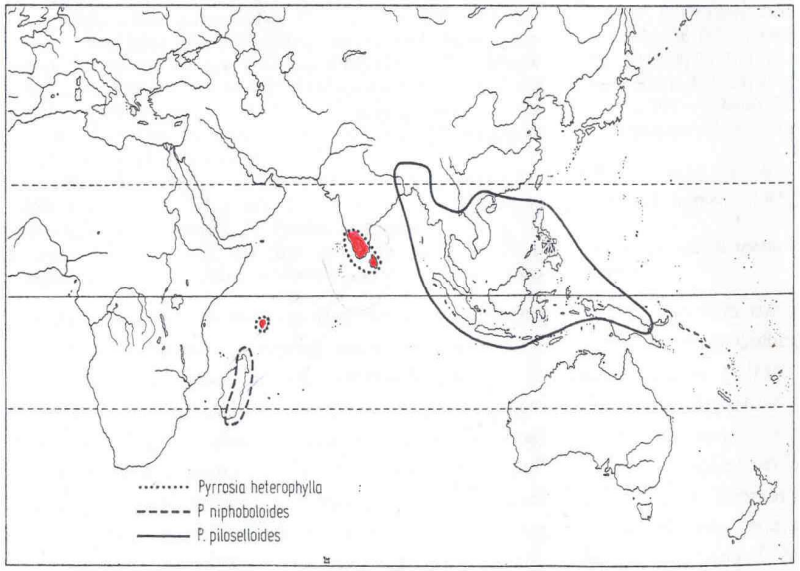
***Oreogrammitis sledgei* Parris**

2. New records to the island

Dicksonia antarctica Labill.

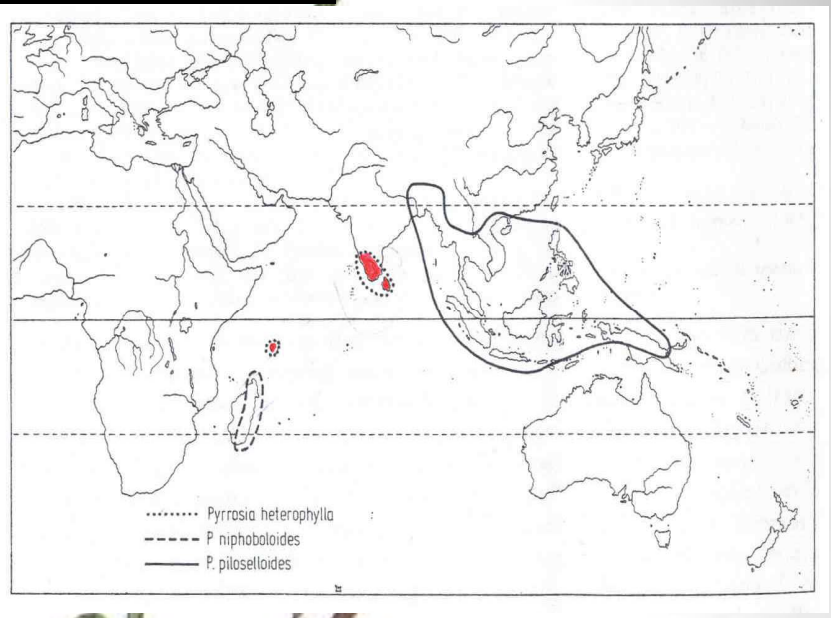
Cyathea australis (R. Brown) Domin

Pyrrosia piloselloides (L.) M.G.Price ???



India and South East Asia

Pyrrosia niphoboloides (Luerss.) M.G. Price ???



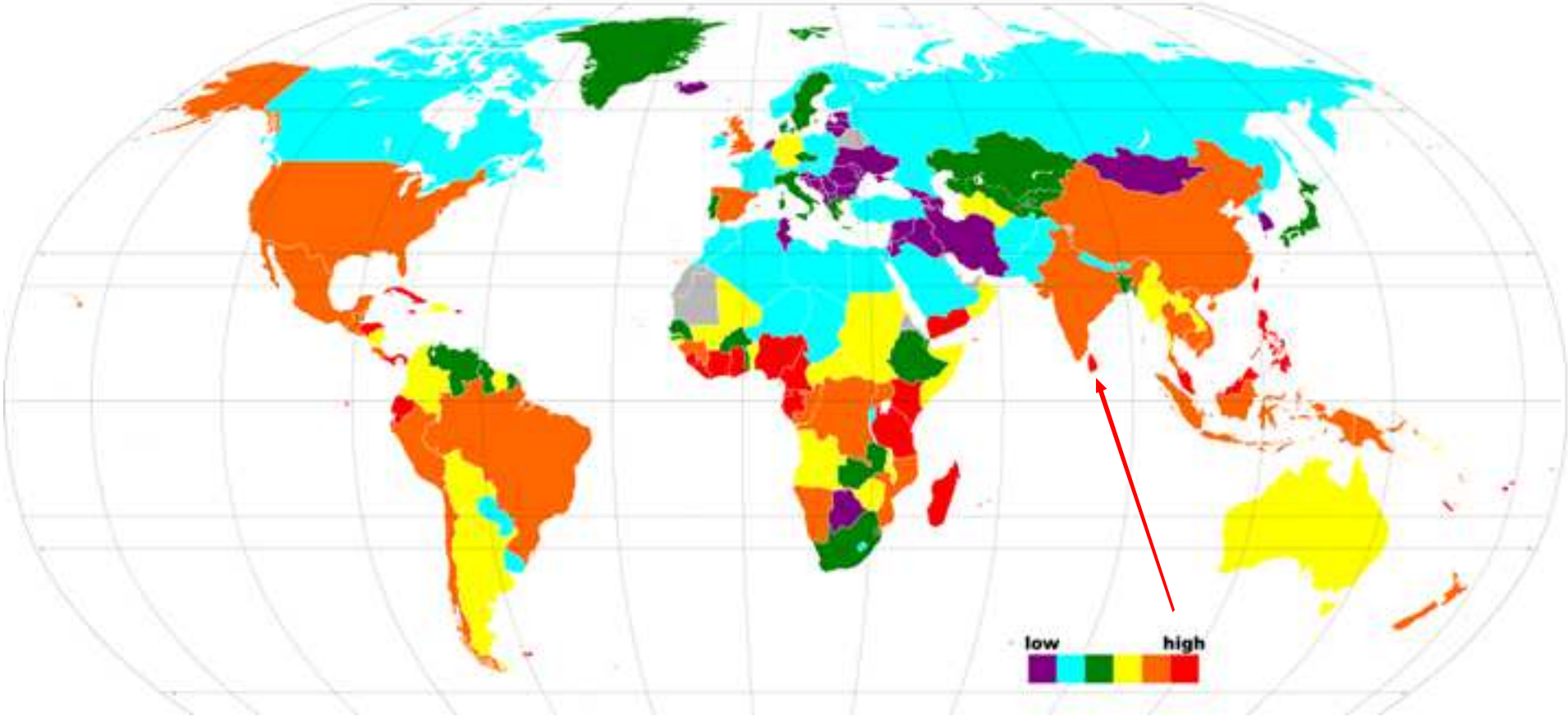
Endemic to Madagascar

3. Rediscovery of supposed to be extinct species

Island populations are subjected to higher risks of extinction than wider-spread mainland populations due to..

environmental reasons

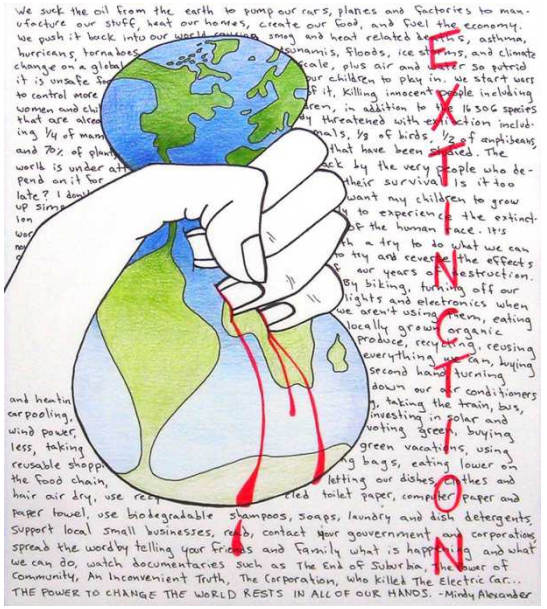
higher level of inbreeding

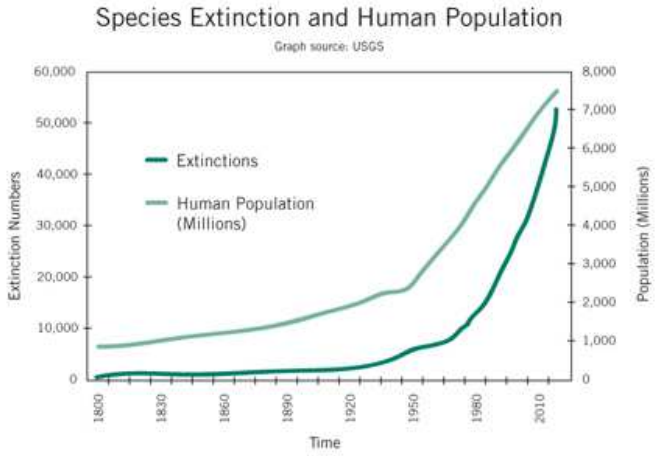


Possible reasons for their apparent extinction

- Deforestation
- Habitat loss
- Unsustainable development activities
- Climate change
- Overexploitation

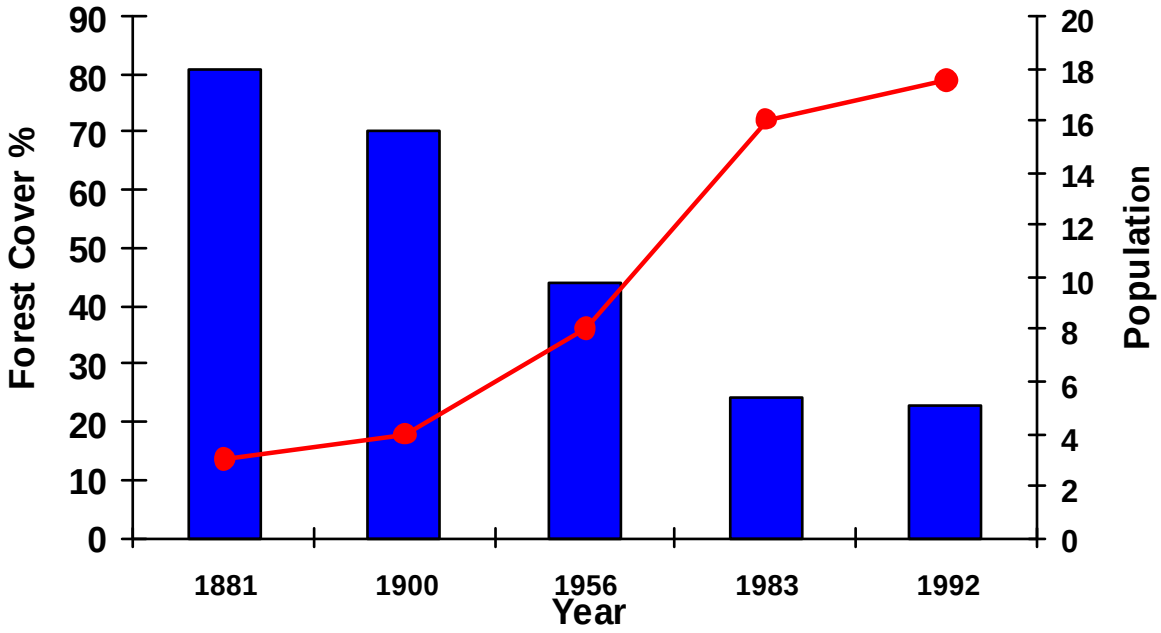
EXTINCTION





Possible reasons for their apparent extinction

Habitat lost and degradation



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Including six epiphytic species

Asplenium disjunctum **Sledge [Aspleniacae] [1885]**

Radiogrammitis beddomeana **(Alderw.) Parris [Polypodiaceae] [1849-1888 ???]**

***Lindsaea repens* (Bory) Thwaites**

***Teratophyllum aculeatum* Mett.**

4. Ecosystem services

Eg. As an indicator species

Family Hymenophyllacaea

19 species including 18 ephiphytes

Health and wealth of the forest

***Didymoglossum wallii* (Thwaites) Copel**

From here

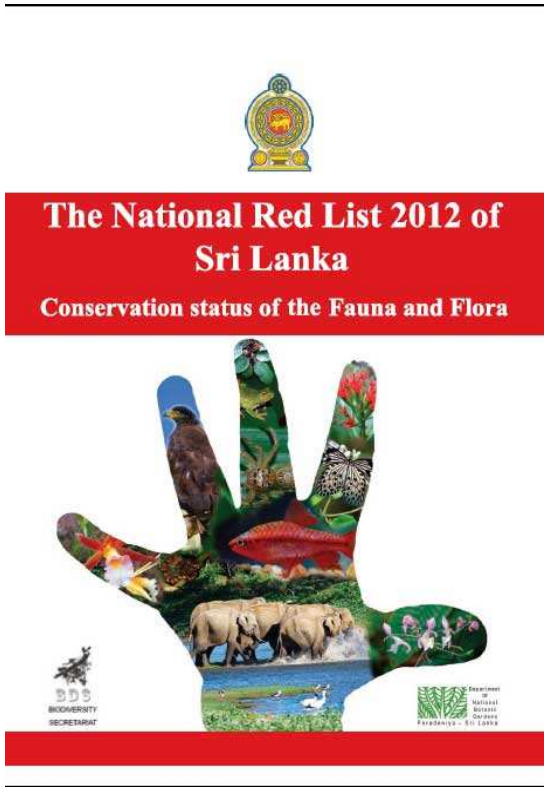
where do

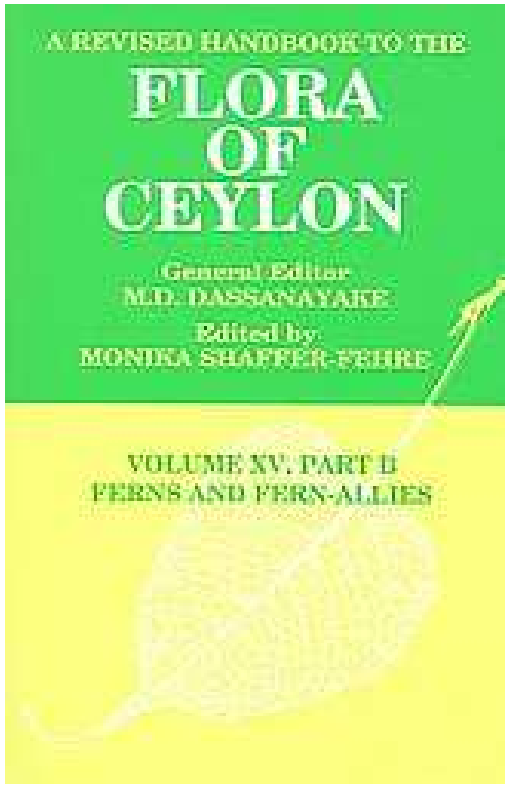
we go ….?

Future Research Priorities

1. Island wide survey on pteridophyte flora of Sri Lanka [based on field exploration]

Central province - well botanized during colonial era





2. Update the pteridophyte collection of the National Herbarium in collaboration with other recognized herbaria

- 76% of pteridophytes specimen in other herbaria (about 34)

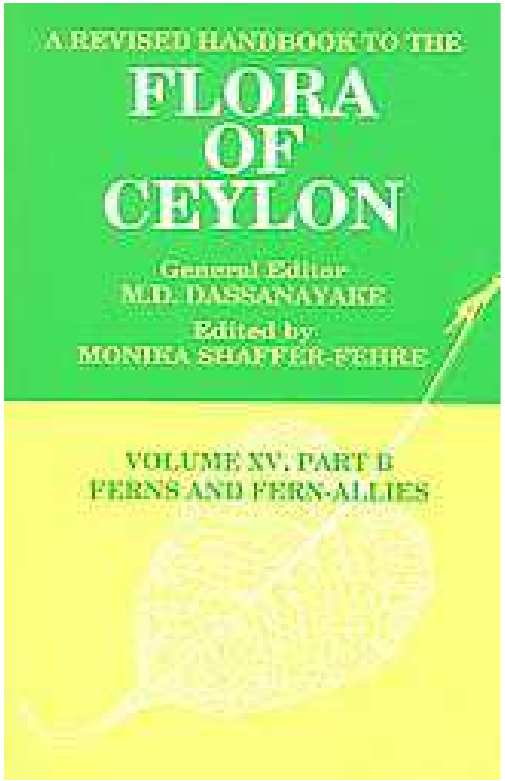
Bolbitis semicordata

Dicranopteris thaiwanensis

About 35% specimens are deposited at the Herbarium, Royal Botanic Gardens, Kew, London

- More than 627 specimens at the AK

3. International collaboration



Lack of

- Pteridologists
- Local knowledge, experience and funding

Thus, international Collaboration is necessary.

- For sharing of information.

4. Develop as an ornamental plants in floriculture industry

Dominated by introduced species


Thank you for your attention