



Figure 1. *Cyathea gigantea* population.

feet of timber, annually. However, the gap between demand and supply was met by illegal cutting, which is continuing even today. These illegal logging operations are intensively confined to more inaccessible areas along the rivers, thus destroying and fragmenting the habitat of *Cyathea* sp. which grows in moist places. The traditional practice of slash and burn agriculture or 'jhuming' is widespread in the region. The bulk of jhuming takes place along the roads and nearby areas, as they are the most accessible. Along with other vegetation, *Cyathea* is also burnt and destroyed.

Due to large-scale deforestation, drying of streams and small rivers in winter and over-flooding during rainy season have become common phenomena which adversely affect the regeneration

of *Cyathea* sp., as it prefers to grow in such habitats. Probability of dispersal of spores of *Cyathea* sp. in adverse/dry habitats has increased many folds due to large-scale logging operations in tropical and subtropical forests of the region. A preliminary regeneration survey of *Cyathea* sp. in and around the Itanagar Wildlife Sanctuary reveals the total absence of young population, i.e. seedlings and saplings. This indicates the failure of regeneration. As a matter of fact, the spores in *C. gigantea* become fertile in February, when the rains are very scanty and the forest floor is dry due to the absence of humus and overhead canopy. Such conditions may have hindered the germination of spores in exposed/deforested areas. Apart from these, deforested areas are quickly invaded by many notorious weeds, e.g. *Mikania macrantha*, *Eupatorium odoratum*, etc. Vigorous growth of these weeds not only hinders the regeneration, but also affects the reproductive efficiency and sometimes causes death of adult plants also, by covering and folding them all-around.

Though the Supreme Court ban on felling is expected to improve the habitat conditions for this species, increasing population pressure coupled with other irrational developmental activities seem to nullify the gradually improving situation. Therefore, it is necessary

not only to ensure proper *in situ* conservation by declaring specific habitats of the species as protected areas (in the same line as the Orchid Sanctuary in Sessa, Arunachal Pradesh), but also *ex situ* conservation by establishing arboreta and gene banks in suitable locations. Modern tissue culture techniques may be developed to overcome the regeneration problem of the species.

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2. Jamir, N. S. and Rao, R. R., in *The Ferns of Nagaland*, Vedams Books, New Delhi, 1988, p. 426.
3. Baishya, A. K. and Rao, R. R., in *Ferns and Fern-Allies of Meghalaya State, India*, Scientific Publishers, Jodhpur, 1982.
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## The integrity of structures, individuals and institutions: The Sunder–Parida episode

I have read with keen interest and deep concern as a scientist, the editorial<sup>1</sup> and the scientific correspondence<sup>2</sup> concerning 'reproducibility of metal fatigue'. *Current Science* deserves kudos for providing a forum for scientific debate on controversial issues of scientific fraud. However, I wonder why the Director, NAL imputes motives to the Editor, *Current Science* for publication of Sunder's paper. Perhaps, he considers NAL, its Director and scientists and DG-CSIR as sacred cows of the Indian scientific establishment, while mentioning a letter written to the Editor to stop publication of Sunder's paper<sup>2</sup>.

It is obvious that the second expert committee had indicted Parida, even though rather mildly. I wonder why the committee failed to establish the owner-

ship of the fractographs, a core issue in the whole episode. Even if there is an element of personal bias and prejudice as claimed by the Director, NAL and Parida in their responses, Sunder deserves the appreciation of readers of *Current Science* for 'letting the cat out of the bag'.

Finally, a word about the questionable means used by Sunder to expose the scientific fraud of a former colleague. I am reminded of the recent exposure of corruption in the high echelons of Indian society and the Ministry of Defence by *tehelka.com*. The Indian Government has taken legal action against Tejpal, the Director of *tehelka.com*, for using questionable means to expose corruption, while accommodating the accused persons even before the enquiry commission

had submitted its report. There is rampant corruption in the political and bureaucratic set-up in India and our scientific establishments are no more islands of honesty. It is only the 'freelancers' like Sunder and Tejpal who risk their lives to expose frauds and corruption.

1. Balaram, P., *Curr. Sci.*, 2001, **81**, 1389–1390.
2. Sunder, R., Parida, B. K. and Prahlad, T. S., *ibid*, 1402–1410.

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