

A critical appraisal of the type locality of a rare palm from Kumaon Himalaya, India

The *Red Data Book of Indian Plants*¹ reports the occurrence of *Trachycarpus takil* from the Thakil mountains in Kumaon Himalaya. This interesting palm species belonging to the family Arecaceae includes tall trees about 15–25 m in height with unbranched stems covered by persistent leaf-bases. The leaves are large, fan-shaped with plicately lobed margins. The flowers are numer-

ous, aggregated on compound interfoliar inflorescence, unisexual, with both male and female flowers appearing on the same plant (monoecious). The fruits are reniform¹⁻³. Nayar and Sastry¹ comment: 'A distinct palm species closely related to the Sino-Japanese species *Trachycarpus fortunei* H. Wdl. The only published picture of this palm is of a plant in O. Beccari's Garden in Flor-

ence, Italy, appeared in *Kew Bulletin* 1912; 291'. It is reported that this species grows on mountain slopes at 2000–2500 m, in the mixed forest of *Quercus*, where it sustains frost and snow. It prefers cool and narrow valley in the northwest Himalaya.

With a view to evaluate the correct status of the species and its type locality and also to investigate the reproductive



Figure 1. A mature plant of *Trachycarpus takil* Becc

biology of this rare palm, a botanical exploration was undertaken to the Kumaon hills. On enquiry from the local people it was learnt that there is no such locality as Thakil mountains, as mentioned in the literature¹. According to them 'Thakil' referred to all palm-like plants, and a part of the hill with an abundance of these palms at one time was named as 'Thalkedar hills'. As regards the location of this palm, most of the earlier references quote 'grows in great numbers, forming clumps and rows, on the Thakil Mountain in Eastern Kumaon, India, in the fork between the Sarju and Kali rivers, between 6500 ft and 7800 ft, where snow generally covers the ground from November to March ... in damp shady glens ... chiefly on the northwest side'. This particular locality lies about 20 km away on the South of Pithoragarh town in the subtropical-temperate zone of Kumaon Himalaya around 2400–2500 m

A critical survey of the locality by the authors showed no trace of any mature palm trees, except for a few palm seedlings as undergrowth in dense forests,



Figure 2. Fibrous leaf sheaths of *Trachycarpus takil* Becc. forming a compact net of fibres.

chiefly of *Quercus* spp., *Rhododendron arboreum*, *Alnus nepalensis*, *Viburnum mullaha*, *Ilex dipyrena*, etc. These seedlings were later on confirmed to be the seedlings of *Trachycarpus takil*. Prior to this survey, Dr Martin Gibbons and his group from UK could locate five big trees of this palm in a cleared forest area on one of the hill tops in the area⁴. The habitat with a thick mat of humus and a closed canopy of trees no doubt forms a very ideal habitat for the growth of palms. Therefore, it is expected that this particular area had at one time an abundance of *Trachycarpus takil*, whose population has been reduced to almost a couple of juvenile plants. However, in Barabay village 5–6 km away from Thalkedar, two mature trees were noticed (Figure 1), but as planted in cultivated fields. One of these was understood to have been planted by Mr Hira Ballabh Joshi about 50 years ago, which should roughly establish the age of the tree.

The unique palm has become the victim of unscrupulous exploitation by the local people. The fibrous leaf sheaths (Figure 2) have a compact net of fibres which form very strong ropes and also coarse cloth, for which these trees are being killed. The fruits are also said to be eaten by the local inhabitants. Whether the species has become endan-

gered mainly due to the human factor or due to certain anomalies/malfunctioning of one or more stages in the reproductive cycle of the plant is yet to be ascertained. Future studies should also clarify certain doubts such as: (a) What are the actual causes for the sharp decline in population? (b) Whether any relationship exists between the population in the habitat (Thalkedar) and the other two mature trees in the cultivated field at Barabay. (c) Suitability of the habitat for the seedling survival and establishment. (d) Whether any other population exists in the nearby areas?

Doubts have also been raised on the taxonomic status of the species. Gibbons⁴ and his associates strongly believe that the populations of *Trachycarpus takil* (of Kumaon Himalaya) could be a population of *T. fortunei*, but separated and isolated during the geologic past when the Himalayan upheaval took place. The present authors view that these two taxa are quite distinct, by the very fact that the population of *T. takil*, though an offshoot of *T. fortunei*, has distinctly adapted to Kumaon Himalaya with no intermediate populations anywhere in between. Genetic experiments involving these two geographically isolated populations can only decide on the correct status of *T. takil*

SCIENTIFIC CORRESPONDENCE

The available evidences indicate that this palm is on the verge of extinction, mainly because of the selective removal as well as habitat clearance for cultivation. Conservation measures, including the protection of the habitat, are urgently called for. *Ex situ* conservation and multiplication in botanic gardens and their rehabilitation in the natural habitat or other similar localities at a later date may bring about an increase in the genetic diversity which is so essen-

tial for the species to continue and counteract the stochastic effects. Till such time the future of this interesting palm is uncertain.

4 Gibbons, M., *Principes*, 1993, 37, 19-25.

Received 20 August 1993; revised accepted 12 October 1994

- 1 Nayar, M P and Sastry, A R K. (eds), *Red Data Book of Indian Plants*, BSI, Calcutta, 1988, p 36
- 2 Duthie, J F, *Gard Chron*, 1886, 457
- 3 Beccari, O, *Ann. R Bot Gard*, 1933, 13, 81

T. S. RANA
TARIQ HUSAIN
R. R. RAO

*Taxonomy and Herbarium Division
National Botanical Research Institute
Lucknow 226 001, India*
