

of the Indian Association of Angiosperm Taxonomy by Ganeshiah in 2006. A certain set of herbarium information was made available online for the duration of one year. More than 2500 visitors browsed through the information. In future, the Agharkar Research Institute plans to further upgrade the information and enrich it by incorporating suggestions and feedback of viewers and making appropriate modifications. The institute also plans to make the basic package of herbarium available to other small herbaria like research institutes, universities and colleges. This will help herbaria grow in strength, initiate networks for digitization and allow for a lot of collaborative interactions. The Botanical Survey of India has also initiated digitizing the type specimens housed at Central National Herbarium (CNH).

If such initiatives are taken up by institutes, Universities and national nodal agencies like BSI and NBRI, this will slowly and surely result in building the entire herbarium online. The potentials of such a networked database are immense and will address many practical difficulties faced by researchers in the field of plant taxonomy. The online available herbarium together with online databases⁶⁻⁸ will help in putting in front, a comprehensive picture of the Indian floral biota. A small step towards building sustainable mechanisms would contribute to a rich knowledge base for generations to come!

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Advance and retreat of Chaurabari glacier

The following observations related to the communication by Chaujar¹ may be relevant.

It has been said '... that the temple remained submerged in ice/glacier for a minimum of 400 years. ...'. The contention that the man-made temple complex remained intact, even after remaining buried for 400 years, under a cover of around 500 m of moving ice mass at the time of 'Little Ice age' appears unlikely. Further, the thought of the passage of the glacial ice through the temple complex and creating striations on the inner and outer walls is improbable. Any such man-made civic structure cannot even remain intact under an impact in a 500 m column of flowing water, let alone moving glacial ice. A glacier has tremendous energy and force to erode the adjoining rock walls of the valley; it not only modifies the earlier V-shaped valley into a broad U-shaped one but also deepens and straightens it^{2,3}.

Although it has correctly been mentioned that '... Temple is made up of thick granites and high grade metamorphic gneissic rock slabs', the foliation planes made up of alternate dark (M, Mica domains) and light coloured (Q-F, quartz-feldspar) bands have been misidentified as 'Striation' markings (figure 8a, b) on the outer as well as inner walls of the temple. The surface across the foliation planes gets rough due to differential

weathering processes. Figure 8b clearly shows the presence of an elongated augen of quartz and feldspar. Good photographs of glacially sculptured striations are available in the literature²⁻⁴.

Assigning lower height of 3160 m to L1 and higher height of 3640 m to L4 needs clarification.

There seems to be an unnecessary mix-up of a number of mythological beliefs like the construction of existing Kedarnath temple by Pandavas, debating the date of *Mahabharata*, submergence of Dwarka, etc. with purely scientific information. There are well-established scientific norms in archaeology to determine the age of temples. Although the Kedarnath temple shows a fine specimen of Katyuri architecture of early medieval period, nothing can be said about the date of construction of the temple with certainty⁵. Even the famous Badrinath temple in the adjoining Alaknanda valley, believed to have been established by Shankaracharya (788-820 AD), cannot be related to that period and seems not older than the 17th century⁶. Thus simply considering '... a minimum age of about 3000 years. ...' for the present Kedarnath temple complex based on mythological beliefs is unwarranted.

Agreeing to the fact that the temple (or any civil construction) cannot withstand the enormous stresses exerted by a column of 500 m moving ice during glacial

advancement, it is suggested that it is essential to reassess the time of glacial advances and retreat, believed to have taken place during Little Ice age. Either the present temple complex was constructed after the glacial advance or the morainic ridges are pre-temple constructions. In case of the latter situation, the palaeogeographic reconstruction of Chaurabari glacier in time and space needs critical reassessment.

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