Travertine deposits cut by fluvial erosion at Mole Creek, Tasmania

Henry Shannon

In Croesus Cave at Mole Creek, there are sections where wall, ceiling and even floor elements are cut in travertine formations which must have been deposited in airspace but which have later been eroded under fluvial conditions. These field relations imply substantial changes in streambed level, from lower than present to some 2m higher before returning to present. Higher ceiling cuts in the cave imply the process has happened more than once. The rise in streambed level and subsequent ceiling cut is attributable to an input pulse of gravel that makes sense as a response to soil mantle instability, likely to have been triggered by glacial/periglacial extremes, and that the travertine deposition occurs through the remainder of a glacial/interglacial cycle. The situation in Croesus Cave contrasts with that in neighbouring Lynds Cave in that the 2m cut level is absent in Lynds. Since Kansas Creek is responsible for both caves and switches from one cave to the other periodically, it is thought that the last change from Croesus to Lynds occurred at least one extra cycle back and certain features of the associated flowstone surfaces, indicating relative age, are discussed.

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Re-solution of flowstone examples

- In certain caves at Mole Creek there are travertine masses which must have formed in subaerial situations, which have been eroded later under riverine conditions. This means there has been a sustained change from the general rule of erosional downcutting to that of sediment buildup. A datum is provided to test ideas of what constitutes old-looking flowstone.

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Fluvial incut in older travertine with scalloping with 2 generations of later canopy formation

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Travertine shelf is undercut, and there has been no growth since which would have been shown by a fringe of stalactites

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This undercut surface is 15 m above present creek level

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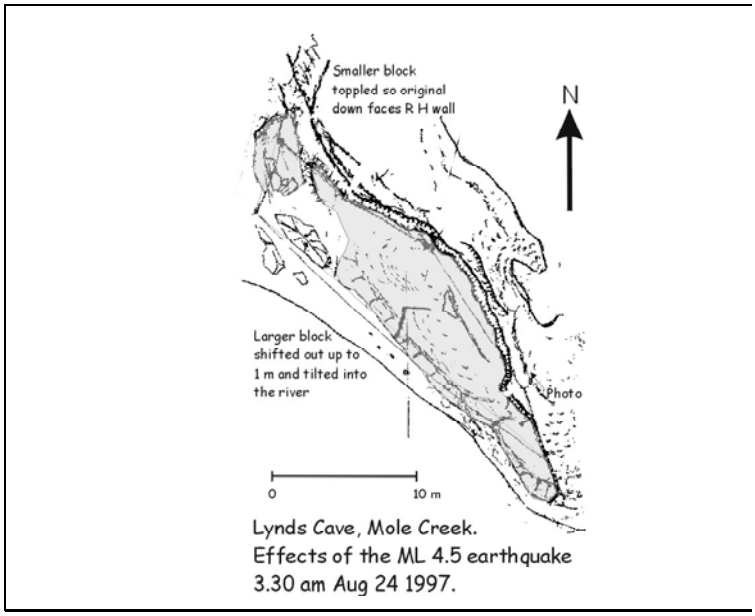

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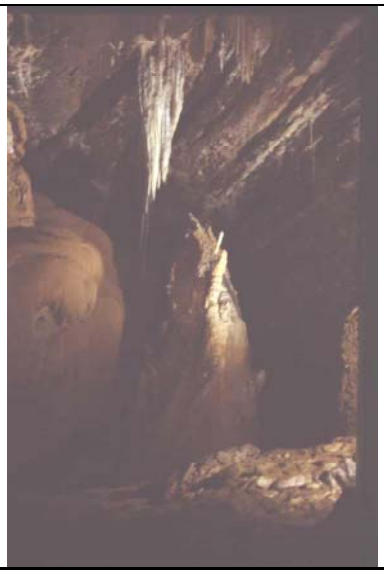

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