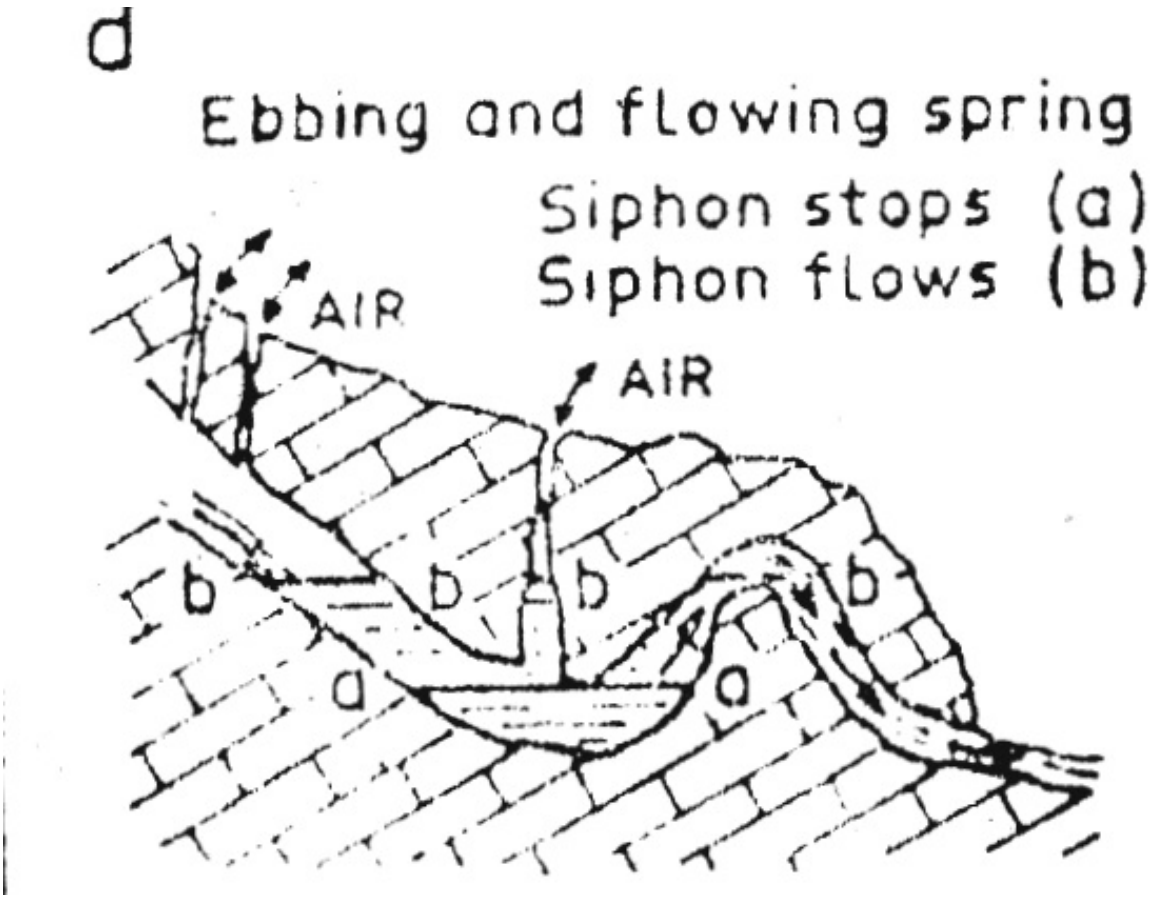
Tides?

How can the tides Dorr observed in the River be explained? Some Folks have thought that if the River is down near sea level, as the old sketches have noted, that the River is connected to the ocean and the observed tide is a result of that connection. Given that the River that Dorr saw is over 200 miles from an ocean, that just can't happen. Tidal flows don't back up any river that far. Some have thought that perhaps the River is connected to a large underground lake of enormous dimensions (larger even than the Great Lakes that show little tidal effect) and the water's flow would have to be unrestricted by any underground structures. So an underground lake in a labyrinth of caverns is unlikely to produce the tides Dorr observed.

There is a structure found in a few caves that gives the flowing water contained in their depths a tidal effect. It's called a siphon, and it works much like a flushing toilet. The diagram below shows how it works. The diagram and explanation are from a book about limestone geology: Jennings, J. N., Karst, M.I.T. Press, Cambridge, Massachusetts and London, England, ISBN 0 262 10011 8, pp. 75-77.

My guess is that this siphon exists below Dorr Peak where the quartz monzonite slopes down from the south to truncate the River bed of the Clark Mountain Fault's underground canyon.



'Ebbing and flowing wells,' intermittent springs with a regular period, such as that on Buckhaw Brow, Craven or the Arize River spring in the French Pyrenees, require a true siphon for their action (Fig. 17d). The water level in the system oscillates between a and b. When it builds up to b, the siphon begins to function and the level drops rapidly to a. There must be some connection to the atmosphere behind the siphon or else air pressure effects would intervene and the capacity of the siphon must be greater than the inflow of the cave stream, otherwise there would simply be a persistent small flow.