

3. Actually there is an immense amount of clear evidence for long periods of erosion before the Redwall Ls was deposited above the Muav. In many places in the Canyon area the Temple Butte Limestone is found lying between the Redwall Ls and the Muav Formation. The Temple Butte Ls is distinct in character and is identified as being Devonian age. In several places it is found to dip down to fill large channels which had been eroded in the Muav before the Temple Butte Ls finally began to be deposited. Then after the Temple Butte was all deposited it began to be eroded off, for a very long period of erosion, until all of it was removed in many places. So, the Redwall Ls was deposited on the Temple Butte in some areas, and in other areas rests on the (older) Muav (Shelton, p. 274-275). This is shown in most vertical-section diagrams of the Grand Canyon. On the top of page 27 of the sheets I have enclosed there is a statement about some of the ancient erosional cavities and channels which McKee and Gutschick found and drew to-scale from the erosional unconformities which exist between the Temple Butte Ls and the Redwall Ls, and the Muav Ls and the Redwall Ls. Waisgerber et al. have reproduced one of the to-scale drawings of an erosional feature, from McKee and Gutschick (1969, p. 17), as Fig. 8 of Waisgerber et al. but lightly dismiss it, saying in their caption, "Nowhere along the North Kaibab Trail could we find any contact that resembled this drawing." (This was the one drawing of McKee & Gutschick's 8 to-scale figures which came from the North Kaibab Trail.) On their page 166, near the bottom of column 1, Waisgerber et al. also make a statement which strongly implies that McKee and Gutschick simply manufactured this carefully-measured, to-scale drawing. Apparently Waisgerber and his colleagues are unaware that ancient erosional features which were observed in the Canyon in 1968 could well be covered over now by accumulated gravel, or could have disappeared entirely either by erosion or by vandalism. (It is extremely unscientific to assume that a described feature does not exist just because one can not find it easily. And to suggest that this feature in a thoroughly-checked research report such as that of McKee and Gutschick is a fabrication shows that the accuser knows little or nothing about the procedures of this type of geologic research.)

4. It is very important to note that the article by Waisgerber et al., here under consideration, does not offer any strong evidences against the existence of erosional unconformities either beneath, in, or above the Redwall Limestone. What the authors have done is to concentrate on describing their failure to find evidence of such unconformities at the North Kaibab Trail site which they examined. They quote from works describing previous research on this site and in Bass Canyon (p. 166) to show that the evidences for ancient erosion are not easily found at these two sites, but they refuse to take seriously the several places in the Canyon where such evidences are unmistakable. For example, on p. 165 they quote from McKee and Gutschick (1969, p. 16) as follows;

At 11 of 21 localities examined, including most of those in eastern Grand Canyon, no evidence of an erosion surface could be detected at the contact; the surface appeared even and flat... Where evidence of an erosion surface is obscure, recognition everywhere of the basal contact of the Redwall Limestone is not easy...

The 3 dots (instead of 4) following "even and flat" in line 3 lead the reader to believe that only a few words were omitted. However, the entire next sentence is omitted; it reads, "In contrast, at most of the western localities an irregular surface of erosion or a basal conglomerate, or both, mark the contact (Fig. 4)." (The Figure 4 to which this sentence refers is the series of 8 to-scale drawings showing specific, ancient, erosional features which they found in localities of the western part of the Canyon.)