

# GEOLOGY

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## XIX PRE-PALEOZOIC TOPOGRAPHY OF OKLAHOMA

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(Abstract)

The three areas in the state of Oklahoma where Pre-Paleozoic rocks outcrop and the records of some widely scattered deep wells which have encountered such rocks have thrown some light upon the nature of the surface upon which the Paleozoic rocks were laid down.

The surface of the Pre-Cambrian rocks at the present time is notably irregular as shown by the outcrops and well records. Much of this irregularity is undoubtedly due to Paleozoic and Post-Paleozoic folding and faulting. In the Wichita Mountain area and in the Arbuckle Mountain area it is believed that much of the elevation is due directly to such cause. The so-called buried granite ridges which extend from the central part of the northern boundary of the state and continue in a general south-westerly direction are subject to two interpretations, (1) they may be regarded as longitudinal ridges of Pre-Cambrian rock upon which the paleozoic sediments were laid down or, (2) they may have been formed by parallel faulting or folding at some time subsequent to the deposition of the older Paleozoic sediments.

If we assume that the present relief of the old Pre-Cambrian surface is due in large part to later deformation the evidence undoubtedly indicates that the Pre-Cambrian surface was in the nature of a peneplain with possibly a few isolated monadnocks, especially in the western part of the state. The writer's interpretation, however, is to the effect that the Pre-Cambrian surface was only partially peneplained, the northern half of the state representing that portion which was most clearly reduced to base level while the three southern mountain areas of the Wichita, the Arbuckle and the Ouachitas represented areas which were not so reduced and probably extended as land areas above the general sea level in early Paleozoic time.