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MONADNOCKS, DIVIDES AND OZARK PHYSIOGRAPHY

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The physiography of the Ozark country has been described in terms of rejuvenated peneplains since the 1890s. According to Bretz (1965) the concept has only recently been challenged by Quinn (1956) and by Hack (1960). Quinn has argued for pedimentation, and Hack has denied the validity of the Davis scheme of sequential stages in cycles of erosion leading to peneplanation, substituting in its place "dynamic equilibrium". Bretz strongly reaffirmed his faith in the idea that the surfaces of the Ozarks are peneplains. He seemed to rely on depth of weathering under humid conditions which furnished clay to fill caves in support of his ideas of peneplanation. He denied it was ever arid enough in the Ozarks to produce pedimentation (and questioned the necessity of concomitant aridity). His statements concerning escarpments and pediments seem obscure and provide some doubt that origin of erosional escarpments and the mechanics of pedimentation are clearly understood. Pedimentation is simply erosion of **backwasting** of escarpments. Surfaces thus produced are called pediments. Union of a number of pediments produces an extended surface of planation usually termed a **pediplain**. Depending on environmental conditions the waste may be deposited locally, as in the Basin and Range Province in southwestern United States, or removed by reduced or periodic stream flow. The chief distinction of a **pediplain** is that the base level of erosion is that of the producing escarpments. The escarpments are ordinarily initiated as valley walls. It may thus be stated the base level of pedimentation is stream level, which in turn may be at any distance above sea level, depending solely on relief. Conversely, a peneplain is a surface of erosion, reduced by **downwearing** to or nearly to sea level. In other words, a peneplain is a low-relief surface of erosion with sea level as its datum. As a matter of practicality, proponents of the peneplain idea consider a peneplain as a surface of erosion sloping gently toward the sea, carved to the lowest gradient at which water will flow.

The peneplain concept acquires its compelling and very authoritative stature at the point where the idea of rejuvenation is employed. Elevation of a peneplaned surface or lowering of sea level is said to permit commensurate dissection. The concept of the graded stream is invoked to provide an explanation of the chain of events set in motion by "uplift". Entrenchment, alluviation, valley widening, terraces or lack of terraces, and alluvial products are explained in terms of uplift, stillstand, and loss of elevation by downward erosion. This is the point of paramount importance in geomorphology and stratigraphy since it is the fundamental basis for the idea of "tectonic" control of land forms, erosion and sedimentation.

One path of investigation concerning the question of the origin of the Ozark surfaces is consideration of the validity of the graded