BEDROCK CONTROL OF DRAINAGE PATTERNS THROUGH GLACIAL DEBRIS

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RICHARD S. BECK

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ABSTRACT

Bedrock does exhibit control over the development of drainage basins. Moreover, it seemed distinctly possible that the bedrock also continued to exert its direction over drainage development even though the bedrock itself was covered by considerable thickness of glacial overburden. This possibility was tested using parameters defined as the Strahler method of stream order, the measuring of fingertip stream orientations, and bifurcation ratios. These parameters were measured in areas in Pennsylvania where the bedrock is not covered by glacial debris and areas of New York where the underpinning is covered by glacial debris. The data, statistically compared at the .05 level of significance, supports the view that bedrock exerts its influence despite the cover by glacial debris. The study also indicated that there were other factors at work and these also played a significant part in the development of the drainage networks.