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ARE ANY GRANITE LANDSCAPES DISTINCTIVELY TROPICAL?

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Geomorphology of granite terrains is extremely varied. One of the first attempts to identify specific granite landform systems was by Thomas (1974), who used morphology to distinguish between four characteristic landscapes. These were multi-concave, multi-convex, and stepped landscapes, with plains as the fourth class. Godard (1977) considered morphotectonic framework and environmental conditions to suggest a range of geographical settings, each possessing a specific suite of landforms of different sizes and associated weathering products. His classification included multi-convex relief, basins, and planation surfaces with inselbergs as typical for tropical shields. An extended typology by Migon (2006) contains as many as nine characteristic types of granite terrains. These are: (1) plains, (2) plains with residual hills, (3) multi-convex topography, (4) multi-concave topography, (5) plateaux, (6) dissected plateaux, (7) joint-valley topography, (8) all-slopes topography, and (9) stepped topography. All of them occur in various parts of the Tropics, and many occur outside the Tropics. Among them, multi-convex relief with weathered compartments is widespread throughout the equatorial lands, but there are hardly comparable examples further north or south. It is probable that mid- and high-latitude plateaux are equivalents of Tropical multi-convex topography, reflecting reduced efficacy of deep weathering systems in the former areas. The problem of correct identification of climate–landform relationships is exacerbated by past global environmental changes, superimposed on the apparent durability of granite. Hence, some mid-latitude granite landscapes may be relicts of the warmer past, but we lack reliable tools to say this with certainty. Currently, the most evident climatic control on the evolution of granite landscapes is exerted via the rates and intensity of deep weathering, as well as via the frequency of landslides removing products of deep weathering. Climate appears a key variable in the context of saprolite renewal after stripping, which is much more rapid in the humid tropics than anywhere else. Constant renewal of the weathering mantle helps to maintain low-latitude landscapes, whereas those in the higher latitudes are more likely to change their characteristics in the long-term.

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