roughness (degree of mineral orientation, slickenside development, etc.), ease of parting, area over which a single plane extends, and the degree to which macroscopic asperities interlock. Particularly for filled macrofractures, the nature of the secondary filling, its strength compared to that of the wall rock, and the degree to which it bonds the adjacent blocks, are doubtlessly important. For example, Boretti-Onyszkiewicz (1966) describes one region in which fresh, open, tensile macrofractures that developed after older calcite-filled ones. The conclusion is clear that the tensile strength of the calcite-filled fractures was greater than that of the intact rock.

Size, Topography, and Tectonics

It is a matter of experience that the mechanical behavior of the rock mass is in part dependent upon its size, topographic expression, and tectonic history (e.g., see general comments by Sutić and Božinović, 1966). Size is a factor in at least three areas: (1) Generally, the strength of a rock mass decreases with increasing size primarily because the probability of encountering flaws is greater in the larger body. It is common knowledge, for example, that in a given rock the stability of an excavation or opening increases with decreasing size (Lang, 1964). (2) Body forces, of course, become appreciable in large masses and can be the dominant factor in a given situation. (3) The extrapolation of laboratory test data becomes increasing tenuous with increasing size of the rock mass (Hansági, 1966). This is so not only because of the flaws in the rock mass, but because the simplified boundary conditions of the experimental test become decreasingly realistic with increasing size of the body under consideration (Judd, 1965).

The effects of topography need little statement. It is well known that (a) if other factors are equal, slope stability decreases with increasing profile angle, (b) masses near the air-rock interface exhibit increased