

stress and bring high-pressure minerals into their fields of stability at depths where they would normally be unstable at the prevailing temperature.

The real basis of the stress mineral concept is petrographic observation, although Harker (1939) also cited the experimental evidence then available in its support. The concept is not the result of any single observation, but rather the result of accumulated experience that certain minerals, one of which is kyanite, characteristically occur in strongly deformed rocks. Although Harker's explanation of it is probably wrong, the association of kyanite with deformation nonetheless exists. An attractive feature of the hypothesis of tectonic overpressures is that it provides a natural explanation of some of the observations that formed the basis of the stress mineral concept.

It cannot, of course, be inferred that all kyanite is produced in regions of tectonic overpressure. Considerable depths of burial are undoubtedly necessary as well. It is highly desirable that the rough calculations used here to arrive at an upper limit to the tectonic overpressure be refined and improved as experimental data on the strength of rocks accumulated. A better understanding of the stresses and movements that have affected the Earth's crust can emerge from such work, and this is almost certain to advance our knowledge of orogenic and metamorphic processes.

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