

Floristic change over the Permian - Triassic boundary

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Data on floristic change over the Permian - Triassic boundary are relevant to the problem of a catastrophic vs gradual transition. We studied the transitional plant megafossil, megaspore and palynological assemblages from the uppermost Permian - basal Triassic deposits of European Russia and the late Changhsingian of South China. These and the published data show a stepwise change including (1) the extinction of cordaitalean and other dominant Paleozoic groups at the Severodvynian - middle Wuchiapingian; (2) a spread of pioneer wetland communities with *Tatarina* and *Gigantonoclea* in the late Tatarian and Changhsingian; (3) the first appearance of typical Triassic forms in the early Vetlugian and equivalents; (4) the emergence of a fully developed Triassic flora with *Pleuromeia* in the late Vetlugian - late Bundsandstein time. The floristic transition thus took about 10 m. y.. Its major stages correspond to the climax cut-off model (Krassilov, 1992) in which a seral development of plant communities is truncated by environmental impacts at a pioneer to mid-successional stages which prevail over the transitional period. In the case of the Permian - Triassic transition, climax stages were cut-off by the rise of continental plates that culminated in their splitting, trap eruption and the related climatic change. Frequent epidermal and palynological anomalies found in our material suggest a mutagenic effect of UV radiation owing to a reduced stratospheric ozone column. Evolutionary innovations appear in the derived forms of pioneer plants that fill vacant ecological niches in their way to a new climax. These processes eventually result in a novel seral system.