

## Shorter Contributions

### Abstracts from the Big Levels Symposium

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LATE CENOZOIC HISTORY OF ALLUVIAL FANS NEAR STUARTS DRAFT, VIRGINIA — Large coalescing alluvial fans mantle the carbonate and shale formations west of the Blue Ridge Mountains near Stuarts Draft, Virginia. U.S.A. Fan deposits contain mostly cobble-to-boulder gravels derived predominately from the Antietam Quartzite. The fan complex consists of at least three mappable alluvial units of different ages with distinctive combinations of clast weathering, soil profile characteristics, and degree of stream incision. Planar or weakly conical surfaces exist on fans of all ages, although stream incision, slope retreat, and scattered sinkhole formation have progressively destroyed these depositional surfaces through time. Well drilling records indicate that fan deposits exceed 100 meters thickness over the Shady Formation carbonate beds but may be as little as 3 meters thick over adjacent clastic units. Stratigraphic data, electrical resistivity surveys, statistical analyses of weathering criteria, and distribution of fan surfaces indicate that fluvial deposition occurred during discrete pulses separated by prolonged periods of weathering and landscape stability. Periodic capture of the upland streams by piedmont streams and solutional lowering of fan surfaces near the mountain front combined to isolate old, deeply weathered fan remnants at the distal edges of the fan complex; much of the youngest, competent fan sediment lies near the mountain front. Comparison of soil development and clast weathering of fan sediments with dated Coastal Plain deposits permits order-of-magnitude age estimates. This comparison suggests that the youngest fan deposits are latest Pleistocene, the intermediate-age deposits may range from late Pleistocene to late Pliocene, and the oldest fan surfaces may be as old as Pliocene or Miocene.

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