

Schlische, R.W., and Olsen, P.E., 1987, Geological Society of America, Abstracts with Programs., v. 15, no. (7), p. 833..

COMPARISON OF GROWTH STRUCTURES IN DIP-SLIP VS.
STRIKE-SLIP DOMINATED RIFTS: EASTERN NORTH AMERICA | № 144433
SCHLISCHE, Roy W., and OLSEN, Paul E., Dept. of Geology,
Lamont-Doherty Geological Observatory of Columbia University,
Palisades, New York 10964

Detailed mapping in the early Mesozoic rift basins of the Newark Supergroup has revealed fundamental differences in the style of growth structures along master faults having various orientations with respect to the regional extension direction (about NW-SE, based on the average orientation of contemporaneous diabase dikes).

The E-W Minas Basin arm of the Fundy basin is bounded to the north by the Minas fault zone, which experienced left-lateral oblique-slip in the Mesozoic. Half graben and graben 200-600 m long and filled with 50-300 m of sediment occur along the faulted margin of the North Mountain Basalt. The long axes of the basins lie at a low angle to the main fault zone. Many structures associated with synsedimentary deformation, including large-scale wedging, angular unconformities, paleoscarps, paleoscarp talus cones and "hydroplastic" slickensides, are found in these subbasins. Similar styles of deformation characterize the narrow neck between the Newark and Gettysburg basins in Pennsylvania and the Argana basin in Morocco, both of which developed along left-lateral faults oriented oblique to the extension direction.

In the Newark basin, folds with axes at a high angle to associated faults characterize the hanging wall blocks of faults oriented normal to the extension direction. The folds do not extend into the footwall, die out in the hanging wall block away from the fault, and are therefore fault-related. The geometry of Jurassic lava flows and plutons suggests folding prior to, during, and after extrusion and intrusion. Similar transverse folds also occur along predominantly dip-slip faults in the Hartford, Gettysburg, and Culpeper basins as well as the NE-trending, dip-slip border fault of the main arm of the Fundy basin.