

Tournaisian stratigraphy, particularly the deposition of the Sussex Group. The Sussex Group consists of three formations: the Stilesville Formation, a basal conglomerate-megabreccia resting on a paleosol on crystalline pre-Carboniferous basement is upward-fining into a grey-red-green mudstone dominated Gautreau Formation, which is overlain by an upward-coarsening Briggs Cross Formation, starting out as conglomerate, but eventually containing megabreccia. The megabreccia of the Briggs Cross Formation contains clasts recording extensive recycling of the Stilesville Formation. Clast-size (up to 10 metres diameter) implies a distal relationship between breccias and source.

Early deformation of the lower part of the Sussex Group (Stilesville and Gautreau formations) is related to thrusts bringing basement slices over cover, and Stilesville Formation over Gautreau Formation. Thrusts are predominantly northward-verging, but southward- and eastward-verging structures are also seen. This thrusting appears to be associated with the recycling of basement and Stilesville Formation clasts in the upper part of the Briggs Cross Formation, and this is consistent with the plastic nature of folds developed in some lithologies, indicating deformation before dewatering was complete.

Thrusts throughout the Indian Mountain Deformed Zone are overprinted by normal faults showing downthrow to the south, east, and west. These same faults cross-cut the Briggs Cross Formation and therefore post-date it. The structural history correlated with the stratigraphy indicate rapid uplift of basement during the end-Sussex Group period, with basement thrust slices over-riding their own debris, followed by collapse of the same 'pop-up' structure. The timing of this collapse is not well constrained, but is most probably early Viséan.

Late Tournaisian 'pop-up' and collapse in a
transpressional strike-slip zone: the Indian Mountain
Deformed Zone, southeast New Brunswick

ADRIAN F. PARK¹, CLINTON J. ST. PETER², AND DAVID G.
KEIGHLEY¹

1. Department of Geology, University of New Brunswick, P.O.
Box 4400, Fredericton, NB, E3B 5A3 ¶ <apark@unb.ca>
<keig@unb.ca> ¶ 2. New Brunswick Department of Natural
Resources, Geological Surveys Branch, P.O. Box 6000,
Fredericton, NB, E3B 5H1 <Clint.St.Peter@gnb.ca>

The structural history of the Indian Mountain Deformed
Zone in southeast New Brunswick is intimately related to late