

**Palinspastic analysis of the Taconian and Acadian hinterland in central Vermont
(poster)**

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The 50 km cross section from the Middle Ordovician foreland shales in western Vermont to the Silurian-Devonian Waits River Formation in eastern Vermont is a product of Taconian and Acadian deformation. The western half consists of multiple generations of imbricated thrust sheets of pre-, syn-, and post-metamorphic character. These rocks consist of Late Proterozoic through Cambrian rift-drift clastics and their associated North American Middle Proterozoic crust which were carried westward on the Champlain thrust zone over the Cambrian-Ordovician carbonate-siliciclastic platform and overlying foreland shales. Structural complexity and metamorphic $^{39}\text{Ar}/^{40}\text{Ar}$ ages (470 m.y.) indicate deformation during the Taconian orogeny in a plate configuration similar to Taiwan.

To the east bedded metasandstones, metasilstones and phyllites of the Mississquoi Group (Middle Ordovician) overlie the more highly deformed heel of the Taconian accretionary wedge. The Mississquoi Group is interpreted as contourites deposited in the syn- to post-Taconian fore-arc basin. The Silurian-Devonian turbiditic rocks to the east are deposited on these rocks along a disconformity marked by discontinuous conglomerates.

The Acadian fabric in the Silurian-Devonian sequence can be traced westward across the Mississquoi Group (forearc basin) into the heel of Taconian accretionary wedge. The Roxbury Mylonite Zone represents the Acadian basal decollement along which the Mississquoi Group, and the Silurian-Devonian sequence was transported westward over

the Taconian accretionary wedge. Subsequent flattening and west-over-east rotation reflect late incipient back folding of the composite cross section for central Vermont. Palinspastic

analysis suggests that the present cross section is approximately 25 percent of its original width.