Sedimentation at the Appalachian thrust front, Port Au Port Peninsula, western Newfoundland

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Sediments of the Port au Port Peninsula, located on the west coast of Newfoundland, record the evolution and destruction of a Cambrian-Ordovician passive continental margin. Middle Ordovician clastics of the Goose Tickle Group were deposited in advance of the Humber Arm Allochthon. Outcrops in Victors Brook have been interpreted as blocks of Goose Tickle Group material incorporated by the advancing allochthon; we interpret the allochthon-derived material in this area as rafts incorporated into the Goose Tickle Group by sedimentary processes.

Based on fieldwork in the Victors Brook area, a succession upward from carbonate platform through shales to clastics of the Goose Tickle Group has been mapped. The Goose Tickle Group sediments contain conglomerates that have been subdivided into three types: the first type is composed largely of sub-rounded limestone clasts in a fine-grained mud matrix; the second consists of black and green shale chips; and the third is polymictic and poorly sorted, with cobbles and boulders of limestone, dolostone, chert, sandstone, and detrital pyrite probably derived from the Humber Arm Allochthon. A large (150 m) raft, and numerous small blocks of material from the Humber Arm Allochthon have been incorporated into the conglomerates. Sandstones and shales interbedded with the conglomerates show partial Bouma sequences and indicate deposition by turbidity currents. Middle Ordovician graptolites were found in the shales.

Comparison of the Victors Brook section with adjacent areas suggests that the Goose Tickle Group in the western Port au Port Peninsula was deposited in a fault-bounded sedimentary basin formed in front of the advancing allochthon. The basin was structurally inverted during later deformation of probable Devonian ("Acadian") age.