

heterogeneous deformation. Vertical paired burrows in the intensely cleaved HG slate function as paleo-plumblines with respect to bedding. Burrows are now boudined down-dip parallel to the quartz fringe lineation and lie within the cleavage. The burrows lie approximately 10° to bedding indicating a high degree of shear strain associated with the transposed bedding. The HG slate also contains rigid pyrite crystals that disturbed the stress field and flow pattern around them during deformation. Sides of the pyrites normal to the minimum compression are low strain areas within which quartz strain fringes formed in the direction of the instantaneous stretching axis (ISA). The strain fringes are important not only because they produced the macroscopic down-dip lineation but also recorded part of the progressive deformation history of the host-rock and indicate the degree of non-coaxiality of deformation and the finite strain.

Structural geology of the Meguma Supergroup and White Rock Formation contact in the Cape St. Marys area, southwestern Nova Scotia

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The contact between the Halifax Group (HG) slate and White Rock Formation (WRF) at Cape St. Marys (CSM) is deformed at greenschist facies, but the exact nature of the contact is disputed. At the CSM “unconformity” cleavage in the HG and WRF are parallel; and bedding in the WRF is parallel to the steeply SE-dipping contact and cleavage. Bedding in the HG slate is more steeply dipping than the contact and displays asymmetric folds with the orientation of thickened short limb and thinned long limb, consistent with topside-up shear (SE, WRF side). The deformed folds are accompanied by intense cleavage with down-dip stretching lineation (quartz fringes on pyrite). With increased distance across strike NW from the contact the zone of intense cleavage is replaced by a narrow interval of open folding bound by another zone of intense cleavage. In all zones of HG, intersection of bedding and cleavage has subhorizontal to moderately steep plunge, suggesting