

### **Structural evolution of the Quaco Head area, southern New Brunswick**

*A.G. Plint and H.W. van de Poll, Department of Geology  
University of New Brunswick, Fredericton, N.B. E3B 5A3*

Re-mapping of the Quaco Head area of southern New Brunswick has revealed a more complex structure than was previously recognized. The structure is dominated by two major thrust slices, separated by south and southeasterly-

dipping thrust planes. The lower thrust emplaces amygdaloidal basalts and bedded tuffs (?Precambrian, ?Devonian) over sediments of the Tynemouth Creek Formation (Westphalian A-B). Close to the thrust plane, the underlying sediments have been overturned towards the north. Resting unconformably on the upper surface of the basalt is a thin layer (<5m) of Windsor limestone (Visean; probably zone A or B) which is disconformably overlain by coarse, polymict conglomerates of inferred Hopewell/Canso Group age (Namurian). This sequence, which may be a few metres or tens of metres thick dips to the southeast at up to 50°. It is truncated by a major fault extending in a northeast-southwest direction and dipping southeast at 45°. To the southeast of the fault, lie thick-bedded Hopewell conglomerates, overturned towards the west and northwest, and dipping towards the east and

southeast between 30° and 90°. These beds appear to be part of a large recumbent fold which was subsequently thrust over the lower, non-inverted limb. Folding and thrusting in the Quaco area was certainly post-Westphalian B and may be viewed as a local response to dextral strike-slip movement on the Cobequid Fault which is inferred to lie a few km to the south. Following Alleghenian/Hercynian deformation, the area underwent extensive erosion prior to deposition of a thick sequence of Triassic alluvial sediments (Quaco Formation). The upper thrust plane was reactivated as a normal fault during a phase of post-Triassic rifting along the Bay of Fundy (presumably related to early Atlantic rifting). During this period, blocks of the Triassic were downfaulted (100s or even 1000s of metres) against rocks ranging in age from ?Precambrian to Westphalian.