Diversity of source and present structural setting of ophiolitic rocks in the Baie Verte Lineament, Newfoundland

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The Baie Verte Lineament, trending NNE within the western metamorphic zone of the Newfoundland Appalachians, is defined by a 90 km long line of ophiolite-derived peridotite bodies, adjoined to the east by a steeply inclined zone containing mafic volcanic and volcaniclastic rocks, and ophiolite-derived rocks. This zone of mainly mafic rocks is generally less than 3 km wide, widening abruptly at its northern end to a maximum of 10 km, where the mostly inverted, easterly-directed, moderately-dipping thrust sheets contain the well-preserved Mings Bight (Point Rousse) Ophiolite Complex. This displays all units found in the best-preserved ophiolite complexes, including sheeted diabase dikes. Along the narrower part of the Lineament, ophiolitic rocks are morre structurally disrupted. Some, including the large lenticular harzburgite bodies (up to about 2 x 8 km) on the western side of the Lineament are likely to be tectonically-bounded slices. Other large lenticular bodies (up to 3 x 0.5 km), found within the Lineament, toward the northern end, consist mostly of ophiolite gabbro and are thought to be huge olistostromic blocks. These lie within generally arenaceous mafic volcaniclastics, which also contain smaller blocks, mostly between 1-100 m long, of ultramafics (some cumulate), gabbros, mafic lavas, and, uncommonly, of diabase dikes. This sequence is not a melange or single olistostrome, but a stratigraphic sequence containing alternating olistostromes and arenaceous-argillaceous sediments. Southward the olistostromic units are restricted to the lowest, and the upper, exposed parts of the sequence. The lowest horizon becomes much richer in blocks than matrix; the blocks are solely of ophiolite gabbros. This megabreccia is interpreted as a submarine fault-scarp talus; internal structural features of the gabbros suggest a pre-depositional history of faulting (transform?). Above this breccia, a conglomerate contains clasts mostly of gabbros, diabase and mafic lavas, but none of ultramafics; the rounding and sorting suggest a shallow-water history. Exotic clasts in this conglomerate require a source similar to the metamorphic terrain to the east; easterly-derived coarse mafic volcaniclastics conformably and directly overlying the pillow lavas of the intact ophiolite complex, and silicic tuffs found elsewhere in the sediments show that nearby island-arc volcanics were an important source for much of this material. The relationships are interpreted as the products of the active arc margin of a marginal basin, and its subsequent deformation by closure of the basin.

* Geochemistry and tectonic setting of ophiolite-like assemblages in the Pan-African fold belts of Namibia (South West Africa)

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The late Precambrian to Early Palaeozoic Pan African fold belts of Namibia

INTERNATIONAL OPHIOLITE SYMPOSIUM
NICOSIA - CYPRUS
1 - 8 APRIL, 1979

ABSTRACTS OF PAPERS SUBMITTED

GEOLOGICAL SURVEY DEPARTMENT
NICOSIA, 1979