

# The geotectonic framework of the Anglesey glaucophanitic metamorphic belt, UK

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In spite of pioneering work of glaucophane schist by Greenly (1919) back to early 20 century, the detailed structural framework of this Pacific-type glaucophane schist belt in UK has not been paid enough attention in relation to the geotectonic development of UK or the continental margin of Baltica.

We investigated in details the geology not only in Anglesey Island but also in the four isolated equivalents along the Llyn Peninsula spending two seasons 2003 and 2004, and collected 700 samples. Here we describe the structural relationship particularly on top and bottom boundaries of this 550-560Ma (Dallmeyer and Gibbons, 1987) glaucophane schist belt.

Top boundary is exposed on the Anglesey Island at four localities, all carefully examined already by Greenly (1919) that the schist unit is thrust over the unmetamorphosed latest Proterozoic high-grade gneiss or carbonate rocks, or very low-grade accretionary complex. The boundary is, however, not thrust but low-angle normal fault.

Bottom boundary is exposed on the southern end of Llyn Peninsula, where 50-60m thick klippe of schist rests on the unmetamorphosed turbidite unit. The boundary is subhorizontal suggesting the reverse fault on the bottom. The total thickness of the BS belt is less than 1 km, although not precise.

The original sub-horizontal relationship of the BS belt against the country rock unit below and above, is extensively deformed by the secondary high-angle normal faults trending NW and NE, juxtaposing the unmetamorphosed accretionary complex or unmetamorphosed turbidite sequence side by side on the map view in many localities.

The internal structure of the BS belt, is characterized by NE-SW stretching mineral lineations of crossite or axial plane of crenulation folds both at low-angle. The highest grade of subduction zone metamorphism reaches to BS to EA facies, and occupies the structural intermediate. The overlying feebly metamorphosed or unmetamorphosed accretionary complex, exhibits the NW-vergent folding indicating the eastward subduction to form accretionary complex.

The Snowdonian calc-alkaline volcano-plutonic belt runs NE-SW adjacent to the SE-wards of the BS belt along the Llyn Peninsula. All of these evidences suggest that the Pacific-type subduction and related increase of continental crust by CA magmatism occurred along the western margin of Baltica before the final closure of the Iapetus Ocean.