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A POSSIBLE MAJOR CALEDONIAN ACCRETIONARY COMPLEX IN SIBERIA:
A PRELIMINARY WESTERN VIEW OF THE TECTONICS OF THE WEST SAYAN MOUNTAIN
BELT

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[Note. The symbol ζ = Cambrian]

This note stems from participation in a 14-day excursion, prior to the 27th I.G.C.(Moscow), led by Drs A. Mossakovsky and A. Dergunov (Moscow) and Dr N. Berzin (Novosibirsk).

The West Sayan mountains (2500 - 3000 m) strike ENE from the W end of the Altai ranges and comprise, mainly, a mass of near-vertical, ENE-striking, deep-water and flyschoid rocks younging regionally southwards from presumed early ζ_1 to mid-Silurian.

The mass is roughly lensoid in plan, some 500 km long and up to 115 km wide, is partly outlined by ophiolitic occurrences of Vendian-basal ζ_1 age, and its W end is apparently flexed southward into the Altai alignment. From its E end a major structural discontinuity can be traced at least to L.Baikal. On the northern margin of the belt the ophiolites lie in the southern limb of a northward-overtaken syncline containing northerly derived andesitic detritus of late ζ_1 and ζ_2 age.

Granites of approximately this age intrude the northern limb, confirming northward subduction at this time. The corresponding northern third of the accretionary prism is more highly metamorphosed, with marbles in the northernmost 'slice', although accretionary slices cannot be discerned as such. The remaining accretion was apparently during mid-O to mid-Silurian. South of this lies a complexly-structured belt displaying ζ_1 and S_1 olistostromes (passive margin?) and a Vendian- ζ_1 ophiolitic belt containing jadeite. Deep ORS-Carboniferous basins, locally topped-out with coal-bearing Jurassic, occur both north (Minusinsk) and south (Tuvinian) of the mountain belt. They exhibit Vendian- ζ_1 rifting at their margins, suggesting that they were initial marginal pull-aparts during opening of the main oceanic basin.

Regionally, there are remarkable similarities to Scotland.