



A Sveconorwegian terrane boundary in the Caledonian Hardanger-Ryfylke Nappe Complex: the lost link between Telemarkia and the Western Gneiss Region?

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Magmatic and metamorphic events in two of the nappes of the Hardanger-Ryfylke Nappe Complex in the Caledonides in SW-Norway, and in the intervening thrust zone, have been investigated by means of ID-TIMS U-Pb zircon and titanite data. Orthogneiss protoliths in the upper Kvitenuit nappe are dated at 1615 ± 6 Ma, showing analogies to the Gothian terrane, including the Western Gneiss Region. By contrast, the Dyrskard nappe is composed of metasedimentary rocks and metarhyolites with a 1508 ± 4 Ma extrusive age and shows an affinity to rocks of the Telemarkia terranes. We argue that the time of thrusting and juxtaposition of the two nappes along the shear zone is constrained by the age of 999 ± 5 Ma of a syndeformational granite body and co-genetic pegmatitic leucosomes, with late Sveconorwegian movements and fluid activity being recorded by titanite at 924 ± 6 Ma. Both nappes behaved as one block during the Silurian emplacement in the Caledonian nappe stack, sharing a 434 ± 1 Ma metamorphic peak and later overprints, as young as 414 ± 2 Ma, related to retrogression. The distinct origin and Sveconorwegian age of coupling of the Dyrskard and the Kvitenuit nappes suggest that, in their pre-Caledonian location to the west-northwest, they represent the now hidden boundary zone between the Western Gneiss Region and Telemarkia.