Although these various comments collectively serve to repudiate Singh's (1968) thesis of lenticular bedding for the Heggtveit lithology, this does not of course imply that lenticularly bedded units are entirely absent from the Seljord Group. In his later paper the author has described lenticular and flaser bedding and presented convincing illustrations of these primary structures (Singh 1969, pp. 18-21). The disagreement is restricted to the interpretation of the lithology exposed at Heggtveit, and it is of interest here to note that during the autumn of 1967 a party of some 12-14 Norwegian and Swedish geologists visited this locality on an excursion led by Förstekonservator J. A. Dons, who explained Singh's theory in some detail. To the present writer's recollection, the modified lenticular bedding origin was overwhelmingly rejected in favour of the deformed conglomerate interpretation, an interesting fact which, while not in itself refuting Singh's hypothesis, goes a long way towards rejection of his idea.

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THE AGE OF THE PEAK OF THE CALEDONIAN OROGENY IN WEST FINNMARK, NORTH NORWAY

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A recent paper by Sturt et al. (1967) indicates the possible existence of an important early phase of the Caledonian Orogeny in North Norway about 500 m.y. ago, on the basis of K-Ar age determinations on alkaline rocks. The present account presents the preliminary results of an extensive investigation of the Rb-Sr ages and initial Sr^{87}/Sr^{86} ratios from this region. The rock selected for the preliminary work was an aplogranophyre vein in the Hasvik Gabbro from the island of Söröy. The vein has a probable anatectic origin (Sturt 1969). The Hasvik Gabbro was a synorogenic intrusion, emplaced at the peak of the regional metamorphism. Thus it is believed that the Rb-Sr isochron for this vein defines both the time of emplacement of the Hasvik Gabbro and the peak of the regional amphibolite facies metamorphism.

Five whole rock samples from this vein were analysed for rubidium and strontium using standard isotope dilution techniques, the prepared samples being run on an Atlas CH4 mass spectrometer. Sr^{84} spike was used in all strontium runs and the data normalized to give a Sr^{86}/Sr^{88} ratio of 0.1194.

Table 1. Analytical data

Sample number	Rb (ppm)	Sr (ppm)	Rb^{87}/Sr^{86}	Sr^{87}/Sr^{86}
RS 95	134.9	89.27	4.38	0.7445
RS 96	198.7	57.38	10.1	0.7851
RS 97	159.1	67.80	6.81	0.7594
RS 98	209.6	66.84	9.13	0.7830
RS 99	181.9	64.20	8.24	0.7722

The results given in Table 1 were computed using a programme written by Van Schmus (1966) and an isochron fitted to these results using York's (1966) double regression least squares method. The isochron (Fig. 1) defines an age of 530 ± 35 m.y. for the time of emplacement of this vein, using $\lambda\ Rb^{87} = 1.39 \times 10^{-11}\ yr^{-1}$, with an initial Sr^{87}/Sr^{86} ratio of 0.711 ± .004.

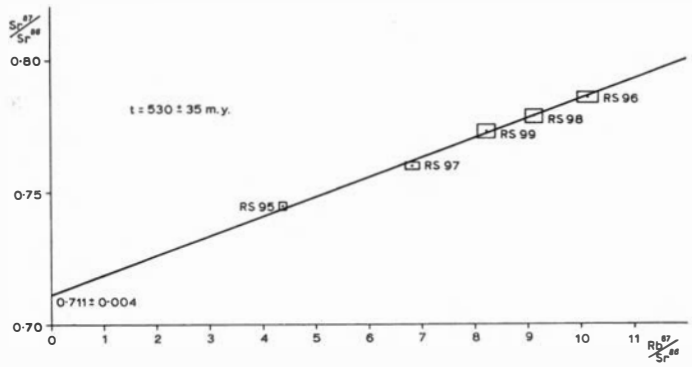

Fig. 1.

This work leads to the conclusion that the main orogenic movements and metamorphism in Söröy occurred during late Cambrian to possibly early Ordovician times. This confirms the postulate of Sturt et al. (1967). The stratigraphical sequence into which the gabbro is emplaced contains archaeocyathids, and according to C. H. Holland (personal communication) the age of these particular archaeocyathids can be restricted to the highest Lower Cambrian and low Middle Cambrian. The fossil-bearing horizons are overlain by a considerable thickness of sediments, thus indicating a probable time for the orogeny as being at the earliest during the upper part of the Cambrian

The initial Sr^{87}/Sr^{86} ratio of 0.711 ± 004 for the veins is in good accord with an anatectic derivation.

This isochron is the first result to be published from the new Rb-Sr facility at Cambridge.

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