

New palaeomagnetic result from Vendian red sediments in Cisbaikalia and the problem of the relationship of Siberia and Laurentia in the Vendian

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SUMMARY

A palaeomagnetic study of Vendian red sediments from the Lena River section on the western margin of Lake Baikal in the region of Cisbaikalia (54ON, 108OE) has isolated a stable remanence with direction $D=296.3O$, $I=-27.7O$ (high temperature component) and a corresponding pole of $2.7OS$, $168.2OE$. The primary nature of this remanence is confirmed from a positive fold test, dual polarities and the presence of detrital haematite. This result together with all late Precambrian – Early Cambrian palaeomagnetic data from Siberia indicates that Siberia occupied low latitudes during that time. It has been proposed on the basis of palaeomagnetic data that Laurentia occupied high latitudes during the Vendian, so it would appear that there cannot have been any Laurentia-Siberia connection at that time. A review of Vendian to Cambrian Laurentian palaeomagnetic data shows that such an interpretation is ambiguous. An alternative interpretation places Laurentia in low latitudes and confirms the Laurentia-Siberia fit of Hoffman (1991) and Pelechaty (1996). However, the lack of Late Vendian palaeomagnetic data for Siberia still allows the possibility that it could have occupied high latitudes during that time.

Key words: palaeomagnetism, Vendian, Siberia, sediments.