

Tectonic history of the Korean Peninsula

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A tectonic history of the Korean Peninsula is synthesized: The previously-obtained palaeomagnetic directions have been rotated clockwise because of dextral faulting during the Middle Triassic time. The clockwise rotation occurred associated with the collision between the North China Block and the South China Block. The eastern part of the South China Block obducted on the central part of the Korean Peninsula in the Early Permian, and the Ryeongnam Block is geographically isolated from the main part of the North China Block. The collision of the North and South China Blocks commenced initially at the Korean Peninsula, and suturing of the two blocks progressed westward.

Greenish sandstones in the Early Triassic Nogam Formation were collected at 23 sites for palaeomagnetic study in the Ryeongnam Block, Korean Peninsula. A high temperature magnetization component with unblocking temperatures of 670-690°C is isolated from 7 sites. The fold test for the directions of the high temperature component is positive at the 95% confidence level. The high temperature component is of primary origin because of the folding age of Middle Triassic. The Early Triassic palaeomagnetic direction for the Ryeongnam Block is evaluated from the directions of this component after tilt correction ($D=347.1$, $I=23.8$ with $a_{95}=5.5$). The palaeomagnetic pole calculated from the primary directions (62.5°N , 336.8°E with $A_{95}=4.7$) shows good agreement with the coeval pole for the North China Block. This suggests that the Ryeongnam Block has been a part of the North China Block at least since the Early Triassic time. A tectonic history of the Korean Peninsula is synthesized: The previously-obtained palaeomagnetic directions have been rotated clockwise because of dextral faulting during the Middle Triassic time. The clockwise rotation occurred associated with the collision between the North China Block and the South China Block. The eastern part of the South China Block obducted on the central part of the Korean Peninsula in the Early Permian, and the Ryeongnam Block is geographically isolated from the main part of the North China Block. The collision of the North and South China Blocks commenced initially at the Korean Peninsula, and suturing of the two blocks progressed westward.