

Oxygen isotopic alteration of carbonates in the calcareous shale and sandstone occurring in the South and North Kitakami Belts

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Carbon and oxygen isotope ratios of calcite contained in the calcareous sandstone and shale from the South and North Kitakami belts were measured. The oxygen isotopic ratios for the samples from the strata deposited before the Oshima Orogenesis (Early Cretaceous) range from 6 to 18 permil vs. SMOW, whereas those from the strata deposited after the Oshima Orogenesis range from 18 to 33 permil. The samples from pre-Oshima Orogenesis were oxygen isotopically altered. The phenomena are interpreted as being due to the results of infiltration of ^{18}O depleted water into the sedimentary formations at the time of the Oshima Orogenesis.