Metamorphic zonation of the Ryoke metamorphic belt in the Kudamatsu-Ynai area, south-west Japan

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Ryoke metamorphic belt in the Yanai-Iwakuni area represents progressive metamorphic zonation, such as biotite zone, muscovite - cordierite zone, K-feldspar - cordierite zone, garnet-cordierite zone, silimanite-K-feldspar zones from north to south. In this study, we investigated western continuation of three metamorphic zones in the Kudamatsu-Yanai area.

Lowest grade zone is biotite zone in the northwestern part of the study area. Further south, three isograds were recognized, i.e., K-feldspar-cordierite, garnet-cordierite, silimanite-K-feldspar isograds from north to south.

The garnet-cordierite and silimanite-K-feldspar zones occur concordantly with Old Ryoke granites. The thickness of the garnet-cordierite zone decreases westwards. The garnet-cordierite isograde intersects both to metamorphic layering and the regional trend of the metamorphic rocks.