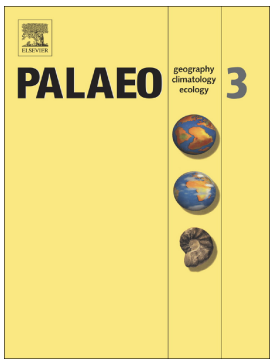
Accepted Manuscript



Middle Permian (Capitanian) seawater 87Sr/86Sr minimum coincided with disappearance of tropical biota and reef collapse in NE Japan and Primorye (far East Russia)

Tomomi Kani, Yukio Isozaki, Ryutaro Hayashi, Yuri Zakharov, Alexander Popov

PII: S0031-0182(17)30951-3
DOI: doi:10.1016/j.palaeo.2018.03.033
Reference: PALAEO 8721

To appear in: *Palaeogeography, Palaeoclimatology, Palaeoecology*

Received date: 12 September 2017
Revised date: 26 March 2018
Accepted date: 26 March 2018

Please cite this article as: Tomomi Kani, Yukio Isozaki, Ryutaro Hayashi, Yuri Zakharov, Alexander Popov , Middle Permian (Capitanian) seawater 87Sr/86Sr minimum coincided with disappearance of tropical biota and reef collapse in NE Japan and Primorye (far East Russia). The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Palaeo(2018), doi:10.1016/j.palaeo.2018.03.033

Middle Permian (Capitanian) seawater $^{87}Sr/^{86}Sr$ minimum coincided with disappearance of tropical biota and reef collapse in NE Japan and Primorye (Far East Russia)

Tomomi Kani [a,*], Yukio Isozaki [b], Ryutaro Hayashi [b], Yuri Zakharov [c] and Alexander Popov [c]

[a] Faculty of Advanced Science and Technology Division of Natural Science Earth and Environmental Science Kumamoto University 2-39-1, Kurokami, Kumamoto, Japan 850-8555 kani@ kumamoto-u.ac.jp

[b]Department of Earth Science and Astronomy, The University of Tokyo, Komaba, Tokyo 153-8902, Japan

[c]Far-Eastern Geological Institute, Russian Academy of Sciences (Far Eastern Branch), Stoletija Prospect 159, Vladivostok, RU-690022, Russia

Abstract

To investigate the secular changes in Permian seawater chemistry and to constrain the global environmental changes during the end-Guadalupian (Middle Permian) extinction, we analyzed $^{87}Sr/^{86}Sr$ ratios in Capitanian (Upper Guadalupian) shallow-marine limestones in NE Japan and in southern Primorye, Far East Russia. These limestones were deposited on the continental shelf/platform of the northern part of Greater South China, which faced the northern connecting seaway between the Tethys and Panthalassa. The measured limestone samples were collected from the Capitanian fusuline (*Lepidolina*)-bearing intervals and overlying beds at Iwaizaki in the South Kitakami belt, NE Japan, and at Senkina Shapka in the Sergeevka belt, southern Primorye. The present analysis of bulk $^{87}Sr/^{86}Sr$ ratios clarified extremely low $^{87}Sr/^{86}Sr$ ratios of 0.7068-0.7070 from all measured samples. These Sr isotopic values support a Capitanian age for these strata. The topmost 30 m-thick interval of the Iwaizaki