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美濃帯犬山地域に分布する上部三畳系層状チャートから得られた古地磁気・化石統合層序
Magneto-biostratigraphy of the Upper Triassic bedded chert succession from the Mino Belt, Inuyama area, central Japan

山下 大輔[1*] ; 宇野 康司[2] ; 尾上 哲治[1]
YAMASHITA, Daisuke[1*] ; UNO, Koji[2] ; ONOUE, Tetsuji[1]

[1] 熊本大学大学院自然科学研究科理学専攻地球環境科学講座, [2] 岡山大学大学院教育学研究科理科教育講座
[1]Department of Earth and Environmental Sciences, Graduate School of Science and Technology, Kumamoto, [2]Graduate School of Education, Okayama University

Late Triassic magnetostratigraphy and biostratigraphy has recently been investigated in both continental and Tethyan marine sequences (Hounslow and Muttoni, 2010). However, there is no agreed on geomagnetic polarity timescale (GPTS) for the Late Triassic, because of poor age control of many Late Triassic magnetostratigraphic sections, missing or duplicated intervals, and within- section changes in sedimentation rates (Lucas, 2013).

In an attempt to circumvent this problem in the Carnian to Norian, we have established the magnetostratigraphy and biostratigraphy of two bedded chert successions from the Mino Belt, Inuyama area, central Japan.

Paleomagnetic samples from Inuyama area were drilled and oriented in the field at an average sampling interval of ˜20 cm. Chert samples were collected at two localities (Sakahogi and Momotaro sections) where Sugiyama (1997) investigated the radiolarian biostratigraphy. In this study, at Sakahogi section, 93 samples for the biostratigraphy study were collected from ˜30-m-thick early Carnian to late Norian red chert section (Section N; Sugiyama, 1997). We also sampled at Momotaro section where ˜15-m-thick early Carnian to late Norian red chert is well exposed (Section Q; Sugiyama, 1997). 45 samples for the biostratigraphy study and 156 oriented samples for the magnetostratigraphy from 176 beds were collected from this locality. In total, 294 samples were collected from Late Triassic (Carnian to Norian) red cherts of the Inuyama area. All samples were thermally demagnetized and analyzed at the paleomagnetic laboratory of Center for Advanced Marine Core Research, Kochi Univ.

We found many platform conodonts from 81 samples in the section N and Q, where the radiolarian biostratigraphy have previously been investigated (Sugiyama, 1997). These sections are relatively well exposed and continuous. Based on detailed study of the conodont biostratigraphy from the interval of the Carnian and the late Norian in the section N and Q, five conodont zones are recognized. These biozones are calibrated with the radiolarian zone studied in the Upper Triassic bedded chert successions in the Japanese accretionary complex. Thermal demagnetization showed four distinct remanent magnetization components from the cherts. Multiple components of secondary magnetization have been recognized from the red cherts of the Inuyama area (Shibuya and Sasajima 1986; Oda and Suzuki 2000; Ando et al. 2001). The lowest temperature component below 200 ℃ (component A) is a present-day viscous overprint. The second component has reversed polarity and unblocking temperatures between 200 ℃ to 420 ℃ (component B). The third-demagnetized component is removed up to 580 ℃ (component C). The first three components are interpreted to be secondary magnetizations. In contrast, the last-removed (highest blocking temperature) component (component D) shows positive reversal tests and is likely primary remanent magnetization. Paleomagnetic polarity reversals observed for the lower Carnian to late Norian are almost correlated with those of other marine sections.

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