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Paleoproterozoic Ocean Floor Reconstruction Project: II Geology of Cape Three Points area in the Ashanti belt of the

KIYOKAWA, Shoichi[1*] ; ITO, Takashi[2] ; ONOUE, Tetsuji[3] ; IKEHARA, Minoru[4] ; YAMAGUCHI, Kosei E.[5] ; HORIE, Kenji[6] ; GOTO, Kosuke T.[7] ; YOSHIMARU, Satoshi[1] ; NYAME, Frank[8] ; TETTEH, George[9]

[1]Earth and Planetary Science, Kyushu University, [2]Ibaraki Univ. Dep. Education, [3]Kumamoto Univ. Dep. Science, [4]Kochi Univ. Marine core Research, [5]Toho Univ. Dep. Science & NASA Astrobiology Institute, [6]National institute of Polar Research, [7]Geological Survey of Japan, [8]University of Mines and Technology, Tarkwa,, [9]University of Ghana Dep. earth science

Paleoproterozoic Era experienced one of the most evolved earth environments during earth history. Early continents started divergence and collisions accompanied by first major oxidation of the atmosphere-oceanic system known as the Great Oxidation Environment (GOE). The Birimian likely was made up of subduction of oceanic basin to form a volcanic island arc. Paleoproterozoic belts are usually not only good targets for preservation of oceanic sedimentary sequences but greatly help understand the nature of the Paleoproterozoic deeper oceanic environments. The Birimian rocks are separated by a nonconformity from the Tarkwaian Group which is a younger paleoplacer deposit (Perrouty et al., 2012). The Birimian is made up of island-arc volcanic rocks; foreland basin made up of shale, sandstone, quartzite and turbidities derived from 2.1 Ga granite intrusions during Birimian volcanism (Kumasi Group).

In this study, we focused on the coastal area around Cape Three Points at the southernmost part of the Ashanti (Axim-Konongo) belt in Ghana where excellently preserved Paleoprotorozoic deeper oceanic sedimentary sequences extensively outcrop in the eastern part for over 4km stretch. This volcano-sedimentary sequence are affected by greenschist facies metamorphism.

Structurally, this region preserves S1 cleavage and asymmetrical synform with west vergence and S0 younging to the east. Provisional stratigraphy is very continuous up to more than 1000m thick. There are several coarsening upward characteristics from bedded volcanic sandstone interbedded with black shale. This continuous sequence indicate distal submarine volcaniclastic section in an oceanic island arc around the West African Craton. Preliminary carbon isotope analysis shows δ13C = ? ?43 - ?37 ‰ for black shale of upper part of the section with the very light isotope being for black shale of euxinic condition such as the Black sea.

Keywords: Paleoproterozoic, Black shale, volcaniclastics, Birimian belt, Ashanti subbelt