

Tephrochronological study of the Yezo Group (uppermost Albiane-basal Campanian) in Hokkaido, Japan

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The Yezo Group consists of siliciclastic marine sequence that deposited in the forearc region of the active Asian continental margin in the northwest Pacific during the Cretaceous interval. This group is the most important for the Cretaceous stratigraphy in Japan because the detailed geological ages of the group have been determined by numerous bio- and chemo-stratigraphic studies that is associated with many radiometric dating of tuff beds. Here we report the results of tephrostratigraphy in the middle to upper parts of the Yezo Group (the uppermost Albian -basal Campanian interval) based on the trace-element composition of apatite contained in tuffs, and improve the regional stratigraphic correlation of the Cretaceous sequences in the northwest Pacific region.

Our results demonstrate that the geochemical analysis of apatite grains are very useful for correlation of individual tuff beds in the Yezo Group. In particular, three widely distributed tuff beds are recognized, and they are intercalated in the lower Cenomanian, Turonian/Coniacian boundary and the Santonian/Campanian boundary. These tuff beds give the suggestion for local biostratigraphic problem where the datum plane of age-diagnostic fossils is sometimes diachronous across areas, which is attributed to the sporadic occurrences of fossils and/or different depositional settings.

Keywords: tephrostratigraphy, Cretaceous , correlation