Highlights of Suzaki Coast, Shikoku Seiyo Geopark - Kurosegawa Tectonic Zone, geologic strata of 400 million years ago -

*Chisato Nakamura[1], Tomohiro Tsuji[2], Shikoku Seiyo Geopark Promotion Council -[3]

1. NAIBA Co. Ltd., 2. Shikoku Research Institute INC., 3. Seiyo City

Kurosegawa tectonic zone is composed mainly of rocks of the continental crust and strata deposited in shallow seas around the continent. It has been assumed that the fragments which has been divided from the supercontinent Pangea near the equator collided with another continent. Suzaki coast is one of the main geological sites of Shikoku Seiyo Geopark in Ehime Prefecture. It is the only location in Japan where the strata of acidic tuff belong to the Kurosegawa tectonic zone crops out continuously for 300 m. The acidic tuff was inclined vertically, creating fantastic landscape. In addition, there are outcrops of tuff breccia and intrusive rocks which are closely related with the acidic tuff. We introduce the highlights of Suzaki coast and explain how these strata were formed.

Acidic tuff: The acidic tuff layer constituted of alternation of muddy and sandy beds. Various sedimentary structures, such as grading, load structure and convolution, those are characteristic in turbidites were formed in the acidic tuff. As showed by Makisaka and Kato (1983), upper direction of the strata faces to the northeast. The acidic tuff includes coarse tephric particles of feldspar, suggesting that it deposited the sea close to continental or volcanic arc. The acidic tuff deposit of 300 m-thick suggests that there was stably volcanic activity over a prolonged period. It is implied that the sedimentary environment of the strata was the sea close to the volcano of the continent. The acidic tuff yields well-preserved radiolarian fossils. Further identification of the radiolarian fossils could contribute to estimate the ages of the sedimentation and the volcanic activity.

Tuff breccia: Tuff breccia including coral fossils overlies unconformably on the acidic tuff with the obvious boundary. The tuff breccia is poorly sorted, and reverse-grading is observed at the bottom of the tuff breccia. Those findings indicate that it is a debris flow deposit formed by the sector collapse or the submarine sliding, and it is presumed that they flowed into the deeper ocean floor.

Intrusive rock: We can see the intrusive rocks at several localities. They cut lamination of the tuff layer and are fine-grained and has massive and homogeneous texture. Since the existence of intrusive rock implies that volcanic activity took place at the site where the acidic tuff deposited, more detailed work is necessary.

On the Suzaki Coast, we can see how the acidic tuff accumulated in the sea close to the continental or the volcanic arc. The Suzaki coast is an academically important place to elucidate the geological history of the Japanese islands and it is also an attractive geological site for the ordinary visitors. Finally, we also introduce how to tour around geological spots in Suzaki coast on the presentation.

Keywords: Shikoku Seiyo Geopark, Kurosegawa tectonic zone, acidic tuff, intrusive rock, debris flow deposit, radiolarian fossil