

O022-P22

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Where the ocean and the land meet land -Scientific story of Muroto Geopark-

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Cape Muroto retains the record of dynamic movements of the earth which resulted from the motion of tectonic plates. The Japanese Island Arc is located at a subduction zone. In most cases, the subduction zone is a region where an oceanic plate meets with a continental plate or another oceanic plate. The denser oceanic plate slides under the other plate and sinks into the mantle. The energy generated from the motion of these two plates is transformed as earthquakes, and the various associated tectonic and magmatic activities lead to continent formation (orogenic movement). Muroto Geopark provides an excellent example for these processes.

The explanation of the background of our geosites involves three geologic stages: 1) formation of the accretionary complex, 2) igneous activities and 3) topography formation accompanying the plate subduction. Other crucial factors are the expected large-scale earthquakes, as well as the disaster and blessings from the sky and the ocean. These are closely related to the various earth-phenomena in different time scales, ranging from several million years (e.g. plate motions) to over several tens of seconds (e.g. earthquakes).

Leading studies in earth sciences focus on "the past", that is retained in the ground of Muroto in the present case, and "the present", which can be observed at the bottom of the ocean off Muroto. Studies on the mechanism of generation of earthquakes and tsunamis are among the most active research fields in the world. Such studies have been conducted on Muroto's geology and the Nankai Trough off the coast of Muroto. The research findings are expected to serve as the basis of the information necessary for minimizing the damage from the earthquakes and tsunamis in the future.

Geological processes occur in time scales that are beyond that of human lives, making it difficult for us to relate them to our daily living. However, our lives are undoubtedly influenced by those processes. We benefit from them, and simultaneously, face the risk of natural disasters. The geosites in the Muroto Geopark possess significantly valuable and useful geoheritage which leads visitors to understand how active our planet Earth is.

What had occurred in the past and what will occur in the future in a region "where the ocean and the land meet?" How can the human civilization co-exist with natural disasters simultaneously enjoying the nature's blessings? The key to these questions lies in Muroto Geopark and at the bottom of the adjacent waters.

Keywords: Muroto, Geopark, Scientific story