GEOLOGICAL NOTES ON AOSHIMA

By

Tsunenaka Iki

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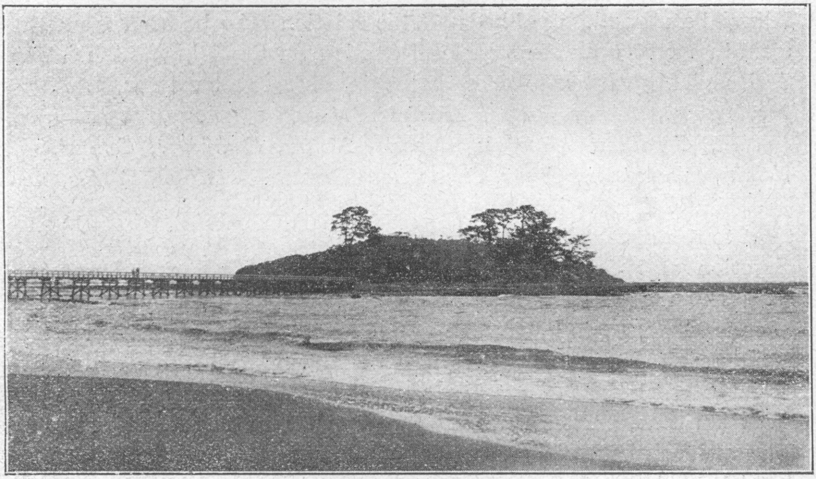

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Aoshima, literally "Green Island," is an islet situated about 15 km. south of the city of Miyazaki on the southeastern coast of Kyūshū. It is a few hundred meters off the coast, and is connected with the mainland by a long wooden bridge, making it easily accessible by foot. The islet rises only 5.7 m. above the sea-level and is nearly 800 m. in circumference, being fringed to some extent by rocky banks which are exposed above the water at low tide. It has become noted for a luxurious growth of tropical and sub-tropical plants, differing remarkably from those of the neighbouring coast. This lovely islet also attracts the visitor's attention by reason of its picturesque scenery when viewed from the coast. From Ōyodo Station at the south end of Miyazaki, the islet is reached within 40 minutes by a train passing through an alluvial plain at the mouth of the Ōyodo River.

The strata composing the islet are of the Tertiary age. In this district, the Tertiary strata are widely developed along the coast, occupying an area about 10 km. wide and 20 km. long. They are divided into two series, the Younger and the Older. The Younger Series is mainly found constituting the hilly land to the north of Miyazaki. It consists of unconsolidated beds of sand and clay, sometimes with conglomerate. These are very regularly stratified with a slow inclination to the east, and are unconformably overlaid with Diluvial sand and gravel beds. This relation may be seen from the train in a cliff near Kawaminami Station on the Nippō Line. The Series yields various shell remains in different localities, such as *Terebratura*, *Lima*, *Pecten*, *Modiola*, *Arca*, *Byssoarca*, *Pectunculus*, *Lucina*, *Cardium*, *Limopsis*, *Dosinia*, *Natica*, *Cerithium*, *Columbella*, *Voluta*, *Pleurvtoma*, *Conus*, *Cancellaria*, *Drilla*, *Dentalium*, *Fussus*, etc.

The Older Series, on the other hand, forms a high mountain tract to the south of Miyazaki, extending for a long distance in the direction of N-S. The strata are highly disturbed, forming some folds and faults. Westward they seem to pass gradually into the so-called "Mesozoic Formation of unknown period." The strata are mainly composed of an alternation of shale and sandstone, with occasional intercalations of conglomerate, limestone and coal seams on the lower horizons. There are also frequent occurrences of marl in the form of lenses and nodules, which contain always some phosphates. A thick sandstone bed, full of *Operculina*, is found in the lower part of the series, extending N-S for a great distance. It is best exposed at the island of Ōshima, where it attains a thickness of 14 m. Besides *Operculina* the bed contains various shell fossils such as *Venus*, *Dosima*, *Pecten*, *Ostrea*, *Tellina*, *Natica*, *Turritella*, *Dentalium*, *Toredo* and also other *Foraminiferan* and *Radiolarian* remains as well as sharks' teeth. The stratigraphical relation of the series to the unknown Mesozoic and the Younger Series is not yet well known owing to lack of detailed studies of these districts.

The Tertiary strata exposed at Aoshima belong to the upper parts of the Older Series and consist of an alternation of sandstone and black shale. The rocks are beautifully stratified, presenting a banded appearance, each bed having a thickness of 0.3-1m. The strata are monoclinal with a strike of N.N.E. and a gentle dip of S.E.E. 15°. On the surface of the sandstone are frequently found sun-cracks filled up with calcareous substance. They are pentagonal or hexagonal having slightly elevated margins, which have been caused by a stronger resistance to erosive action at these points than in the other portions. Occasionally small irregular depressions are observed within these polygons. Several minor faults are met with, running almost parallel in the direction of N. 80° W. and sometimes even step-faultings may be observed. The surface of the islet is covered by a deposit of beach sand on which grow various plants, forming a thick jungle which is almost impenetrable.

The strata composing Aoshima are no doubt a continuation of those exposed on the neighbouring coast and seem to have been insulated by the erosion of the waves.