

# **SEDIMENTARY ENVIRONMENT AND PERIODICITY OF OLIGOCENE CORALLINE ALGAL BIOSTROMES IN NISHISONOGI PENINSULA, JAPAN**

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Nanatsugama Sandstone of the Lower Oligocene Nishisonogi Group in Nishisonogi Peninsula, western Japan is divided into fifteen lithological cycles. The lower part is characterized by five cycles including conglomerate, densely bioturbated medium-grained sandstone and hummocky cross-stratified (HCS) sandstone and trough cross-stratified (TCS) sandstone in ascending order. The middle part is characterized by three cycles composed of densely bioturbated medium-grained sandstone, HCS sandstone and debris flow deposit in ascending order. The uppermost part of Nanatsugama Sandstone is composed of seven cycles of shoaling-upward sequences obtaining structureless medium-grained sandstone, HCS sandstone and rhodolith-bearing sandstone in ascending order. All these sedimentary cycles in study area indicate shoaling-upward shelf system from inner shelf through lower shoreface to upper shoreface. And the rhodoliths formed coralline algal biostromes in study area recognized by lithological distribution. Based on the magnetostratigraphic data of twenty-three sandstone samples and six strontium isotopic ages analysed from rhodoliths, these coralline algal biostromes developed between 33.5 Ma and 30.9 Ma. Then the periodicity of each cycle is calculated as about 50 ky to 170 ky. Such high-frequency sedimentary cycles are most likely ascribed to have been formed under a major control of eustasy.