

DEPOSITIONAL ENVIRONMENT CARBONATES SANDSTONE UNIT OF THE NYALINDUNG FORMATION BASED ON OUTCROP DATA

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Abstrak

The research area is located in Loji Village, Simpenan District, Sukabumi Regency, West Java Province. The research was conducted by geological mapping method. The determination of the carbonaceous rocks precipitation environment based on the characteristics of lithology and fossil analysis. Based on the characteristics of lithology, this unit consists of carbonate sandstones. In megaskopis unit of this Carbonate Sandstone has physical characteristics, brown, medium grain sand size - very fine sand, circular round, open pack - closed, good sorting and bad permeability. The results of fossil foraminifera benthic and planktonic analysis show that the bathymetry zone is at the outer center of neritic. So it can be predicted that the deposition environment of this unit is in shallow sea.

Keywords : lithologic characteristics, benthic foraminifera, depositional environment

INTRODUCTION

Research on Java Island has been widely practiced and studied both in mapping for practical purposes and for academic purposes. However, thorough understanding of Java geology especially in Sukabumi area is still limited. Many aspects still need to be studied about the development of this area, whether the problem of structural geology, stratigraphy, sedimentation and determination of depositional environment.

The geology of the Sukabumi region is chosen as a research area because it is geologically quite interesting to do research, especially in conducting geological sciences applications in the field based on the geological laws that have been obtained in the lecture bench. The sedimentary environment is an environment where the accumulation of sediment materials is influenced by physical, chemical and biological aspects that may affect the characteristics of the resulting sediment.

These things underlie the author to conduct research on the village area Loji, District Simpenan, Sukabumi, West Java Province.

GEOLOGIC SETTING

Regional Geology According to Van Bemmelen (1949), West Java is divided into 5 units of physiography that generally leads to the East West:

a) Jakarta Area.

It ranges from Serang to Cirebon, composed of rocks consisting mostly of alluvium deposits (flood deposits and coastal sediments), lava sediments and mud volumes from Quaternary volcanoes.

b) Bogor.

It stretches from Jasinga in the west of Bogor to Bumiayu in Central Java. This line consists of hills and ridges which are an elaborate and convex anticlinorium to the north, composed by a neogenous layer folded and followed by frozen rock body activities of bosses and necks .

c) Bayah mountains.

It stretches from the west side of the Bogor with a not so wide spread when compared to the spread of other physiographic units.

d) Bandung.

It stretches from the east of the Bayah Mountain Path to the east of Tasikmalaya and ends at Sagara Anakan on the southern coast of Central Java. Structurally the Bandung is the culmination of the anticline of Java Island that has been destroyed by the end of the Tertiary Period.

e) South Mountain Region of West Java.

The physiographic area is also divided into three parts, namely Jampang, Pangalengan, and Karangnunggal. Based on the division of physiographic units of the west Java region, the research area is included into the Bogor Zone.

METHODS

The research method used is field orientation method. The distribution of rock units refers to the characteristics of rocks that can be observed and obtained in the field such as rock types, geological symptom uniformity, and other symptoms in the body of the rock (Sandi Stratigrafi Indonesia, 1996). In the naming of rock units in the research area using nomenclature of unofficial litho-body unit.

The determination of the bathymetry zone is based on the type of bentonic foraminifera species as shown in the Phleger table (1951). To distinguish one species from another is to pay attention to some characteristics of the fossil.

RESULTS AND DISCUSSION

Based on the characteristics of lithology in the field By megaskopis unit This Carbonatan sandstone has physical characteristics; brown with dark brown lapel, medium grain sand size - very fine sand, circular bearing, open-closed packing, good sorting and poor permeability. This unit has a massive sedimentary structure and there are fractional components of fossils.

Microscopically using a microscope (+ X Nikol) this carbonate sandstone has a grayish brownish color, a massive structure, bad disaggregation and a closed pack. The badly sorted carbonate sandstones with granular components present quite a lot, consisting of quartz, feldspar, and a relatively fresh plagioclase, the Carboned Sandstone Unit located in the open ocean deposition environment seen in the still-shelled fossil. The andesite and dacite volcanic rock fragments are mostly fresh even though some have been altered and oxidized; pieces of sedimentary rocks of

sandstone and sandstone appear to have been partially altered.

Age Range and Environment The precipitation of micropaleontological analysis results of the Carboned Stone Unit was found in the fossil Foraminifera Planktonik, namely:

1. Globigerinoides immaturus LEROY,
2. Sphaeroidinella subdehiscens BLOW,
3. Globigerina praebulloides BLOW,
4. Globigerinoides subquadratus BRONN-MANN.

Based on the age range of the data above, this Carbonatan sandstone unit has an age range of N13-N17 (Middle Miocene) (Table 1). The finding of the Foraminifera Bentonic fossil, ie;

1. Heterolepa praecincta KARRER
2. Lenticulina suborbicularis PARR

Thus, it can be determined that the sedimentary environment of this Carboned Sandstone Unit is the Shallow Sea, can be seen in Range of Bathymetry (Table 2).

CONCLUSION

Based on the characteristics of lithology and fossil contained it can be estimated that the carbonaceous deposition environment of the carbonate unit in the research area is in shallow marine environment.

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Table 1. Age Range on foraminifera fossils in carbonate sandstone units

NO	UMUR (BLOW, 1969)	OLIGOSEN					MIOSEN												PLIOSEN					KUARTER	
							BAWA H					TENGAH					ATAS								
	NAMA FOSIL		N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20	N21		N22
1	<i>Globigerinoides immaturus</i> LEROY																								
2	<i>Sphaeroidinella</i> <i>subdehiscens</i> BLOW																								
4	<i>Globigerina praebulloides</i> BLOW																								
5	<i>Globigerinoides</i> <i>subquadratus</i> BRONNMANN																								

Table 2. Batimetric Range of Carbonate Sandstone Units (Tmbpk)

Zona Batimetri Foraminifera (m) Bentonik		Pheger (1951)		Neritik			Batial			
				Litoral	Dalam	Tengah	Luar	Atas	Tengah	Bawah
					0	-20	-50	-100	-200	-600
		-2000								
SBS	<i>Heterolepa praecincta</i> KARRER									
	<i>Lenticulina suborbicularis</i> PARR									

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