

#### Bryozoa Taxonomy and Palaeoecology in the Neogene of SE Asia Emanuela Di Martino Supervisor: Paul D. Taylor

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#### Contents

#### • What is a bryozoan?

 What do we already know about Cenozoic Bryozoans from the Indonesian Archipelago?



Hi! We are bryozoans studied by Emanuela

Bryozoans are colonial invertebrates, which are abundant in modern marine environments, and have been important components of the fossil record. Their calcareous skeleton has a good fossilization potential so they can be important rock-forming material



<u>Dr Claus Nielsen (University of Copenhagen)</u>



- Gut and lophophore
- Muscles
- Funicular system
- Skeleton
- Communication pores
- Ovicell



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The individual functional units are called '<u>zooids</u>'. Schematic anatomy of anascan cheilostome:

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1. Phylactolaemata

(entirely freshwater in distribution), uncalcified



Bryozoans are divided into three classes:

Bryozoans are divided into three classes: 2. Stenolaemata (marine)

Cryptostomida, Cystoporida
 and Fenestrida (Lower
 Ordovician - Upper Permian)

Trepostomatida (Lower
 Ordovician to Upper Triassic)

• <u>Cyclostomatida (Lower</u> <u>Ordovician - Recent)</u>

Colonies encrusting or erect Body wall calcified

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 membranous or gelatinous,
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What do we already know about Cenozoic bryozoans from Indonesia? ...Almost nothing ... The number of papers that cite Cenozoic bryozoans is restricted and occurrences are rare! First report Oppenoorth and Gerth (1929) "...part of the rich fauna of Nanggoelen beds ... " Lagaaij (1968a; 1968b; 1969) Keij (1973) Cook and Lagaaij (1973; 1976) • • Franchino et al. (1988) Pouyet & Braga (1993)

## What do we already know about

#### Cenozoic bryozoans from Indonesia?

Species	Age	Locality
Filisparsa sp.	Late Oligocene	Lombok
Exidmonea sp.	Late Oligocene	Lombok
Idmonea sp.	Lower Miocene	Malaysian Borneo
Crisia sp.	Lower - Middle Miocene	Malaysian Borneo, Madura
Lichenopora sp.	Middle Miocene	Madura
Nellia oculata	Miocene	East Java, Madura, Tanimbar
<i>Nellia</i> sp.	Late Oligocene	Lombok
Vincularia sp.	Miocene	East Borneo, East Java, Madura, Tanimbar
<i>Canda</i> sp.	Lower Miocene	Malaysian Borneo
Scrupocellaria sp.	Late Oligocene-M. Miocene	Lombok, Madura
Synnotum sp.	Lower Miocene	East Java, Madura
Poricellaria sp.	Middle Oligocene, Miocene	East Java, Madura, Tanimbar, M. Borneo
Steginoporella sp.	Middle Miocene	Madura
Thalamoporella sulawesiensis	Eocene	Sulawesi
Thalamoporella sp.	Middle Miocene	Madura
Chlidonia piriformis	Lower Miocene	East Java, Madura
<i>Cellaria</i> sp.	L. Miocene	Malaysian Borneo
Skylonia sarawakensis	Early Miocene	Malaysian Borneo
Skylonia thomasi thomasi	Middle Miocene	Malaysian Borneo, Madura
Skylonia thomasi madurensis	Middle Miocene	Madura
Crepis aff. longipes	Lower Miocene	East Java
Catenicella sp.	Miocene	East Java, Madura
Vasignyella cf. otophora	Middle Miocene	Madura
Savignyella sp.	Middle Miocene	Madura
Gemellipora sp.	Early Miocene	East Java, Madura
Pasythea sp.	Middle Miocene	Madura
Margaretta sp.	Lower-Middle Miocene	Malaysian Borneo, Madura
<i>Reteporella</i> sp.	Middle Miocene	Madura
Celleporidae sp.	Middle Miocene	Madura
Lacrimula asymmetrica	Miocene	W. Madura
Lacrimula grunaui	Miocene	E. Madura
Lacrimula similis	Miocene	W. Madura
Conescharellina sp.	Miocene	E. Madura

11 species
21 genera
Some authors only identified
specimens to family level.

#### My aims...

1) Identify bryozoan taxa present in sampled sections

 Track changes in bryozoan diversity and taxonomic composition and correlate these with facies changes

3) Estimate MART (mean annual range in temperature) values from within-colony variations in zooid size

4) Apply variations in branch diameter of erect bryozoans to estimate relative bathymetry



# Thank vou!