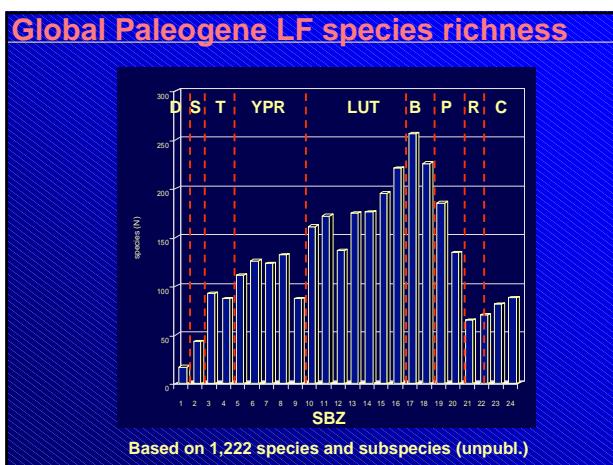


seminario 25 giugno 2013  
I macroforaminiferi del Paleogene:  
classificazione, biostratigrafia e paleoecologia

INSPRA  
INSTITUT NATIONAL DE LA PROPRIÉTÉ INDUSTRIELLE  
SAPIENZA  
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Dipartimento di Scienze della Terra  
Dipartimento di Geologia e Mineralogia

## Filosofia della zonazione SBZ Biometria

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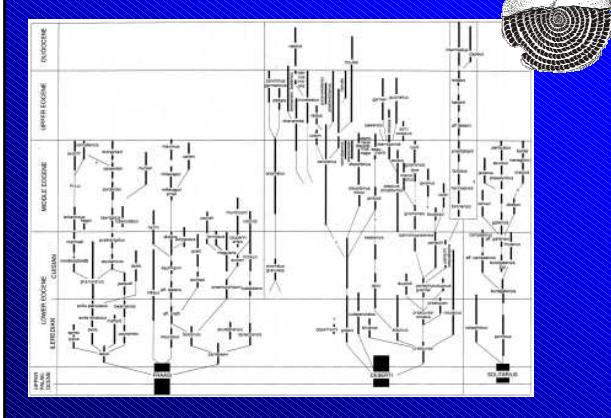


Systematics & Phylogeny

Over the years, a number of authors proposed different hypotheses on the phylogeny of all many larger foraminiferal groups

Species concepts employed in the various groups are not uniform

### Phylogeny (Blondeau, 1972)



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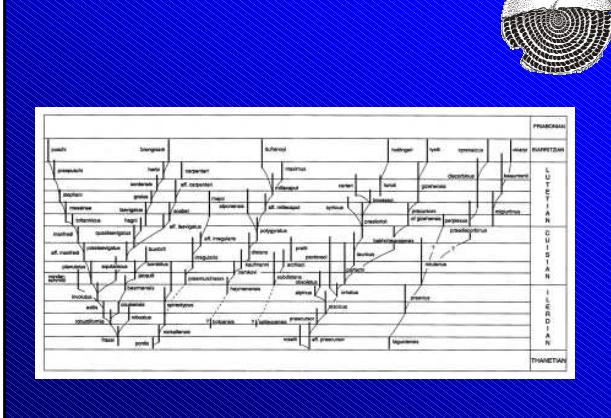
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### Phylogeny (Schaub, 1981)



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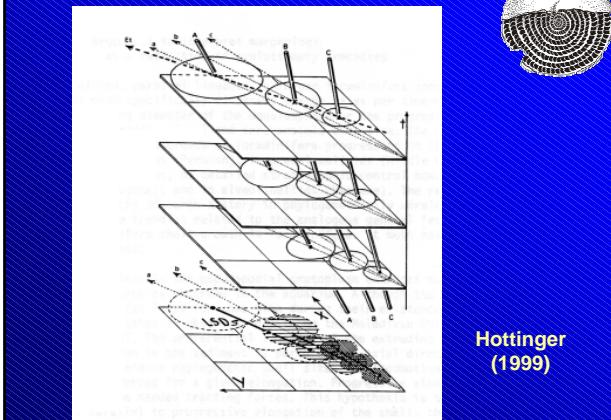
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### The typological approach



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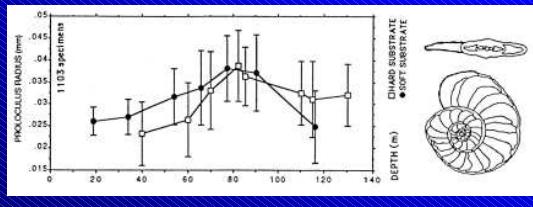
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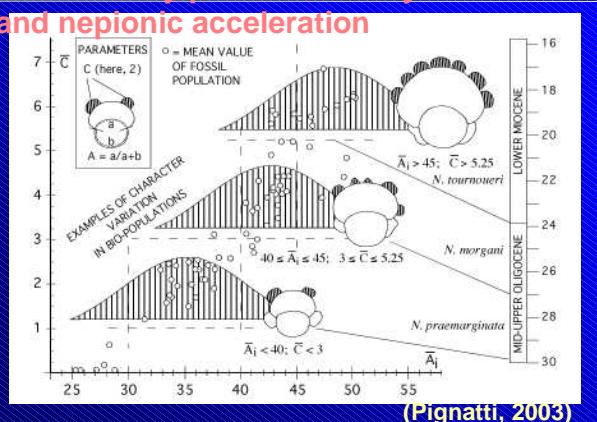
## The biometric approach

### Recent Assilina ammonoides from Elat



Pechoux (1995)

## Evolutionary patterns: embryonic and neionic acceleration



(Pignatti, 2003)

## Species concepts and biozonations

### Typological species concept

Examples: nummulitids (except *Cycloclypeus*), rotaliids, agglutinated conicals, and alveolinids

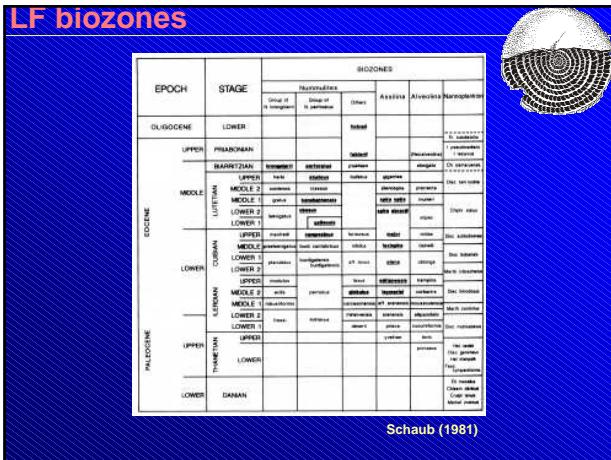
Discrete zonations

### Biometrical species concept

Examples: "orbitoidiform" (= "radial") LF

Continuous zonations

## LF biozones



## Shallow Benthics Zonation: P-E

