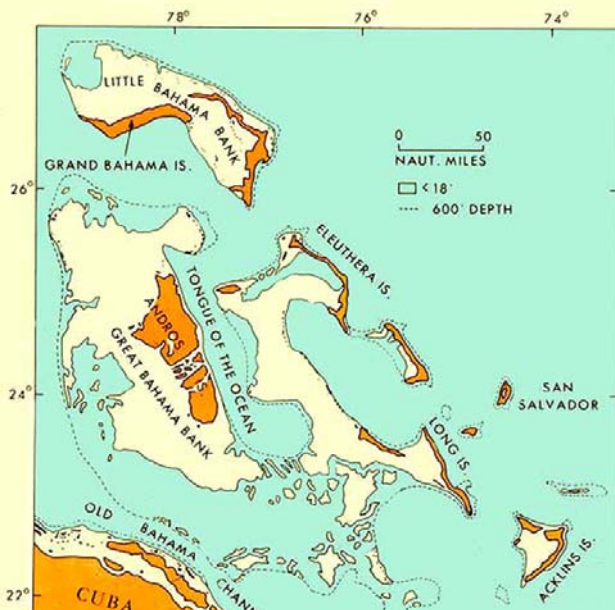
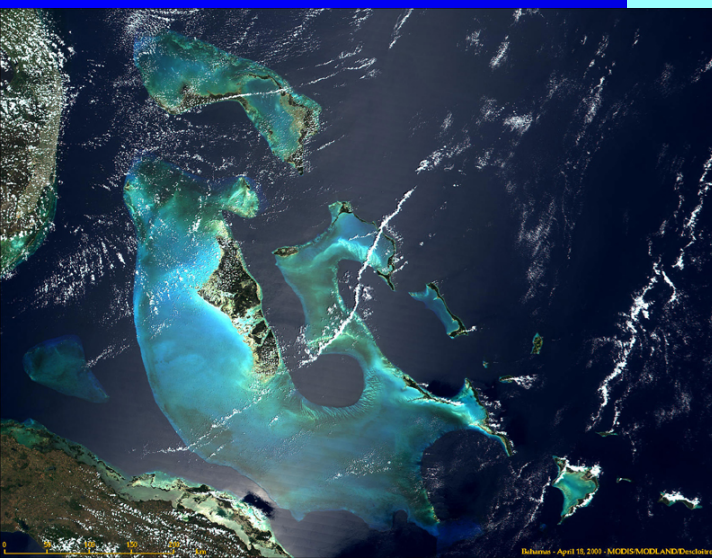
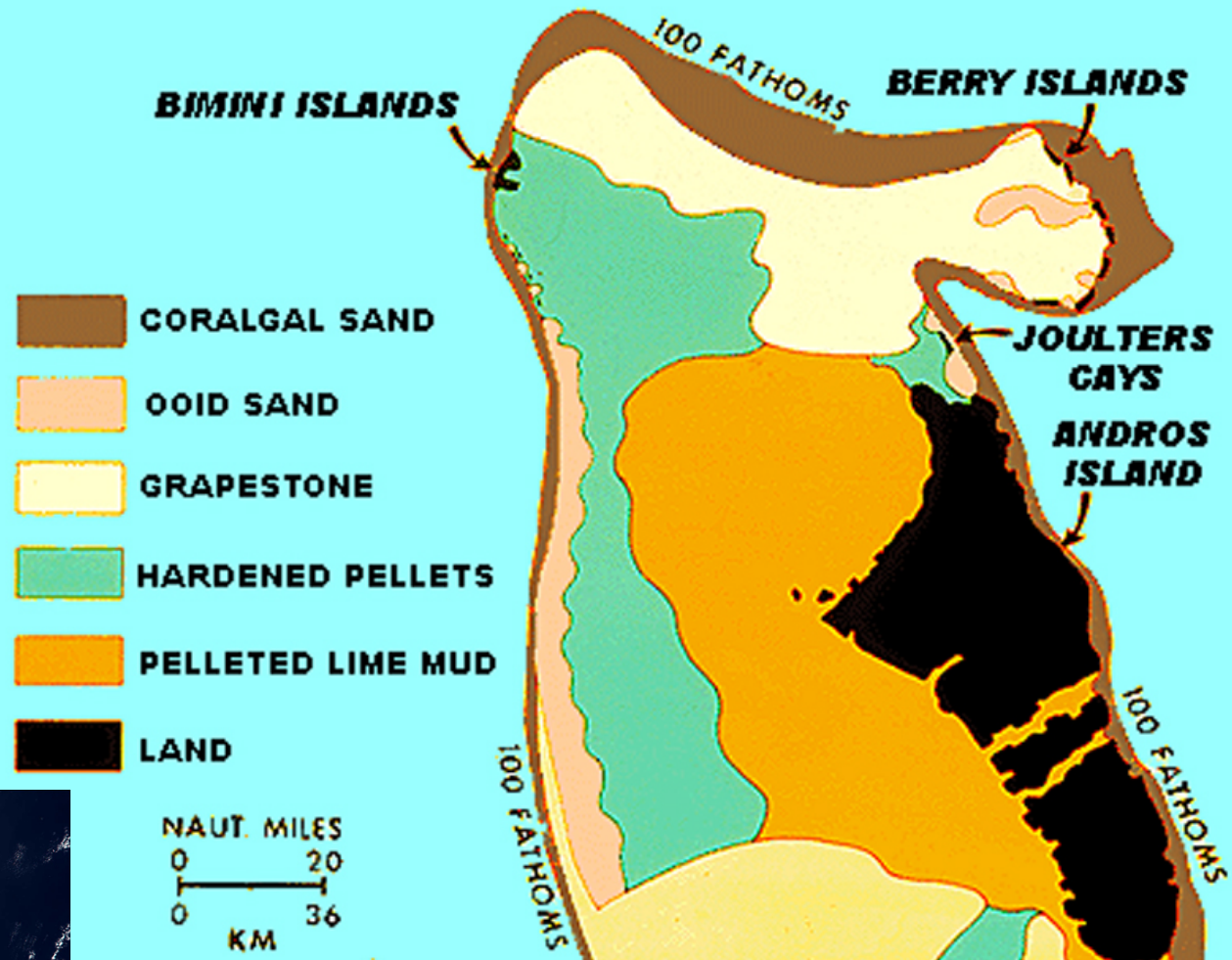


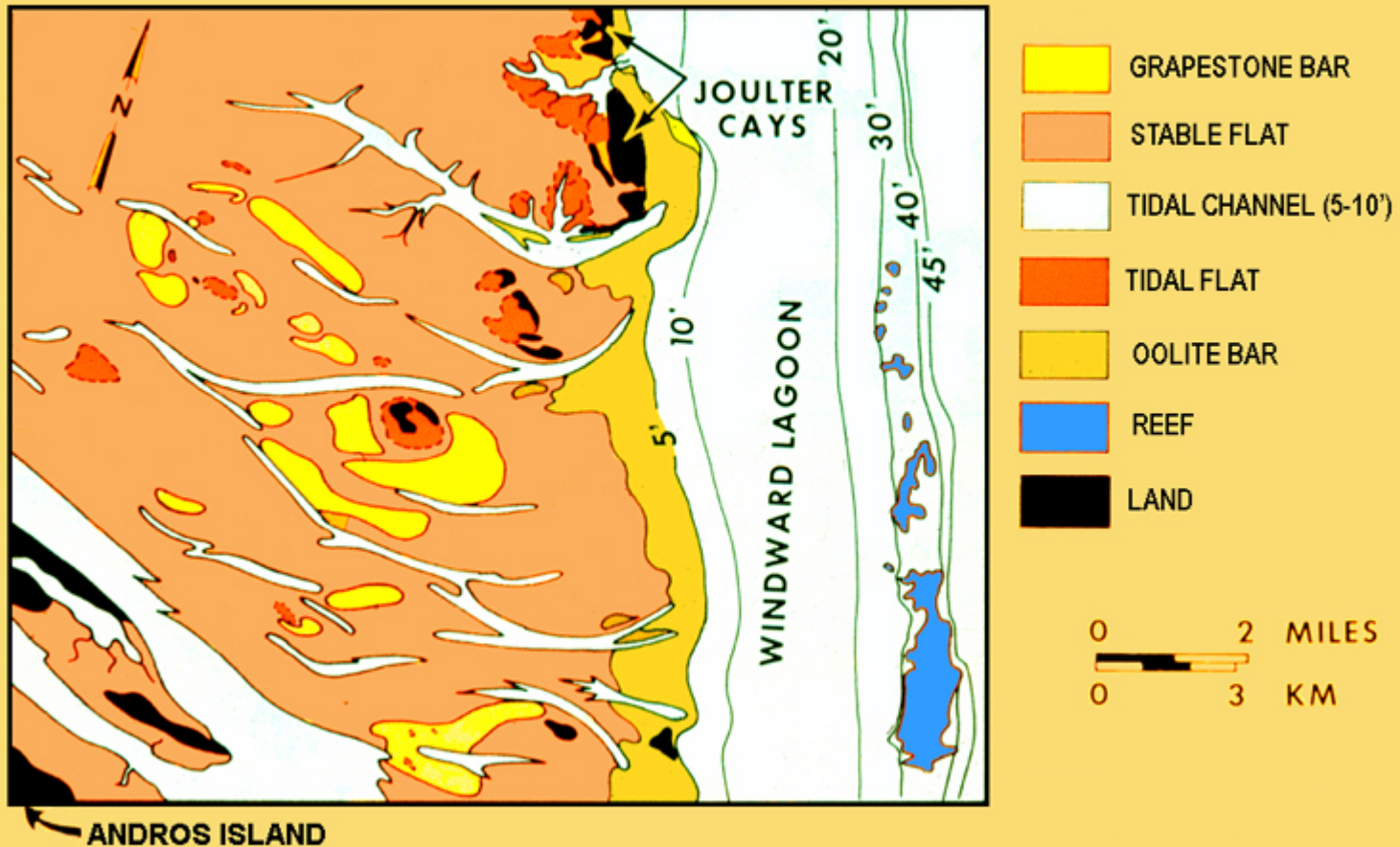
BATHYMETRIC CHART - BAHAMA BANKS



CARBONATE FACIES - ANDROS PLATFORM



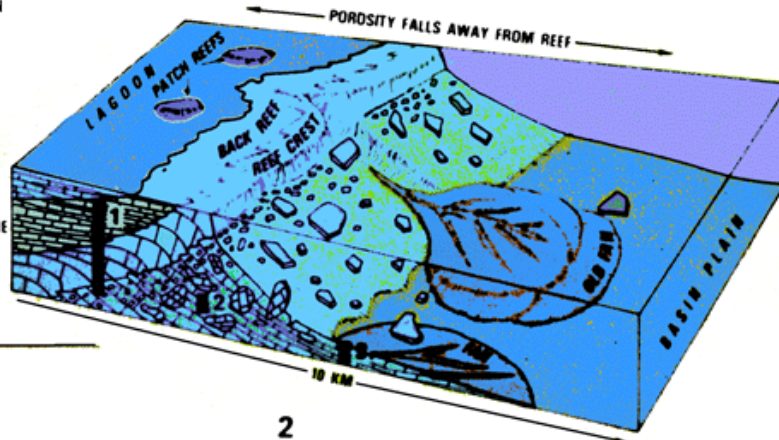
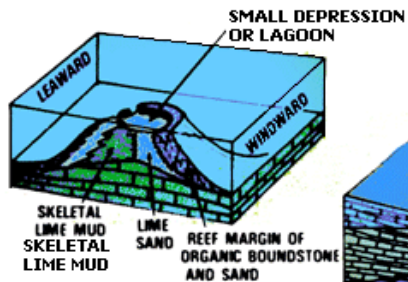
FACIES DISTRIBUTION - JOULTER CAYS AREA GREAT BAHAMA BANK



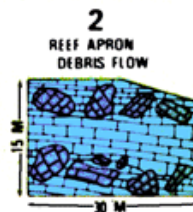
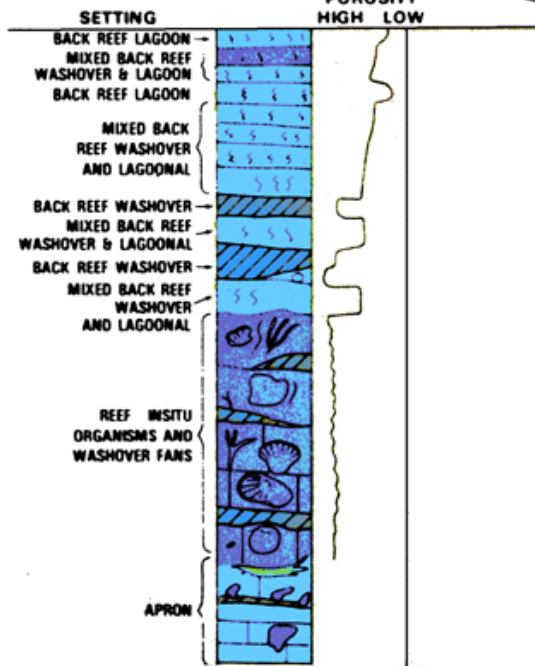
Slope and Margin Carbonates

PATCH REEF

POROSITY FALLS TOWARDS CENTER OF PATCH
BEST ON WINDWARD SIDE WHERE WAVES
WINNOW SEDIMENTS

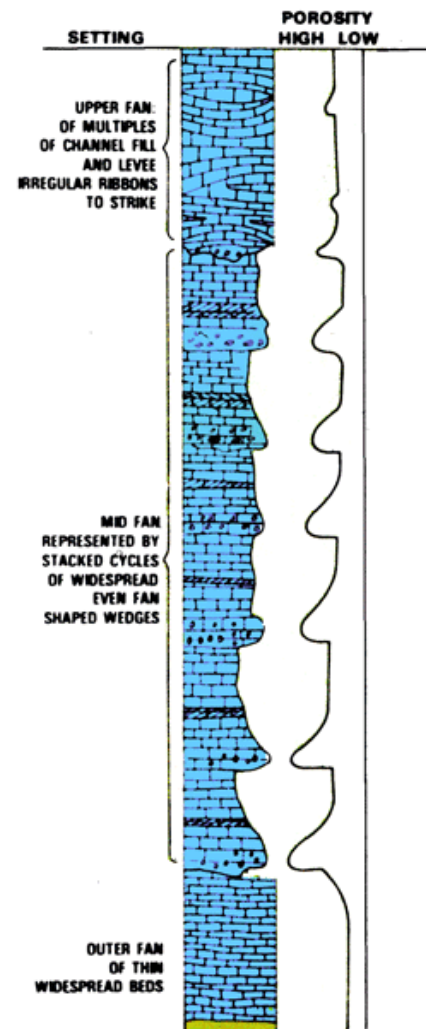


1 BACK REEF



GEOMETRY IRREGULAR CHANNEL FILL
ALSO SMALL TO ENORMOUS BLOCKS
THAT LOOK INSITU
LITHOLOGY BLOCKS ARE VARIABLE
MATRIX IS LIME MUD
POOR SINCE SEDIMENT MATRIX IS
MUD SIZED AND POORLY SORTED

3





Sierra El Mulato

Cañon El Alamo

Formaciones

Formación
Difunta

Lutita
Parras

Fm. Indidura/
San Felipe
Fm. Indidura/
Agua Nueva

Cuesta del Cura

Caliza Tamaulipas

Formación
La Peña

Caliza Cupido

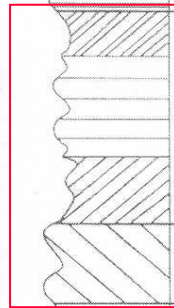
Taraises

La Casita

Formaciones
La Gloria, Zuloaga
Minas Viejas

Formación
Nazas

Formación El Cercado



CAÑON EL ALAMO

Monterrey

Sierra San Cristobal



Longoria et. al. (1998).

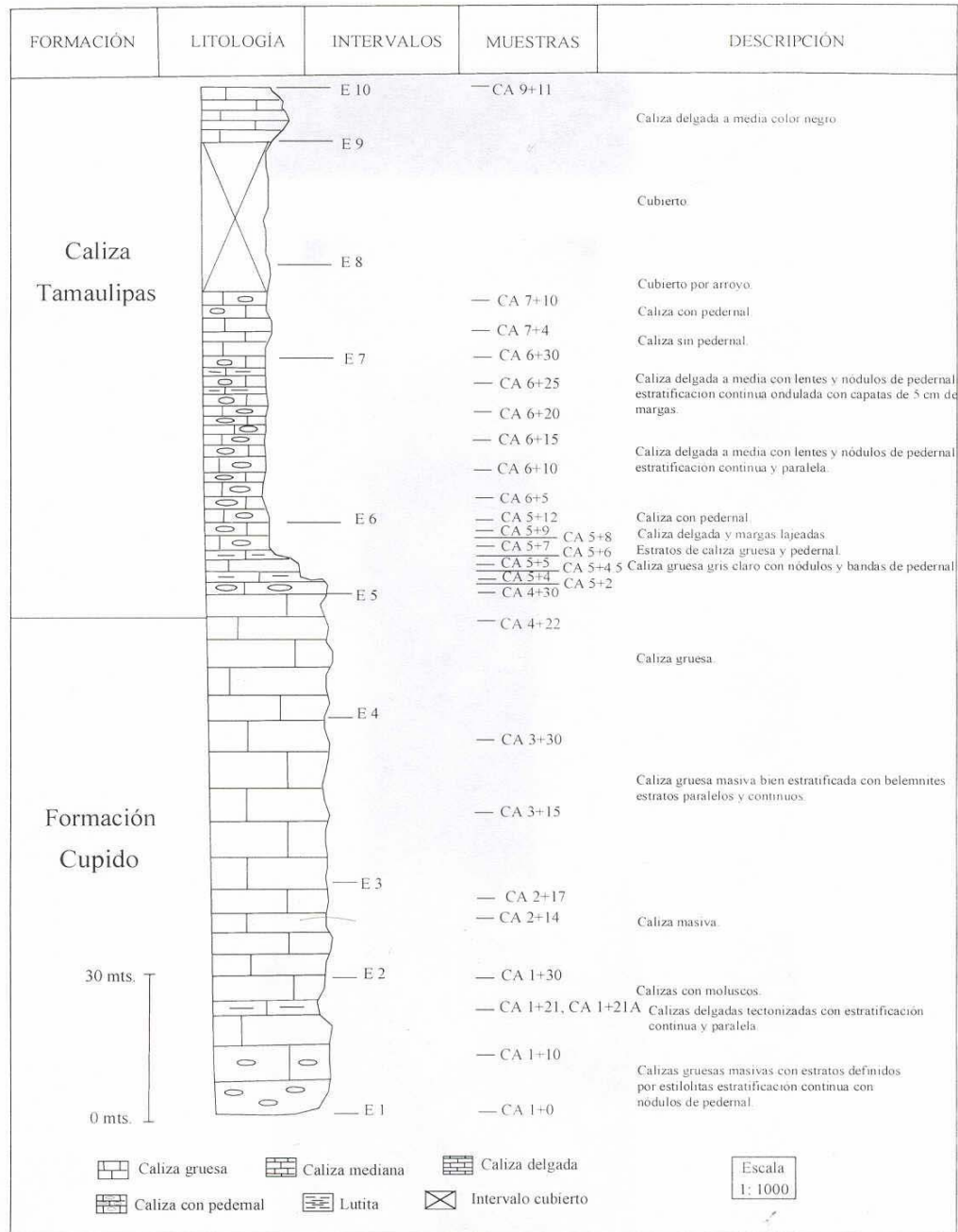


Formación Cupido.
Eje de Anticlinal San Juan Bautista.



Caliza Tamaulipas, calizas con pedernal Cañón el Álamo, Sierra San Juan Bautista Nuevo León.

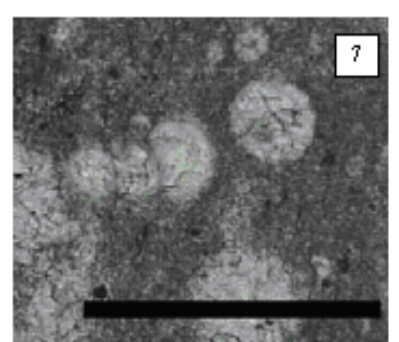
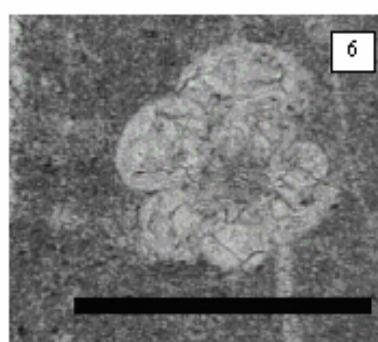
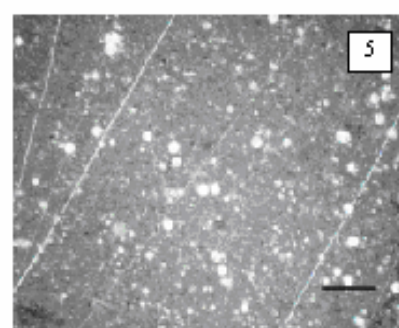
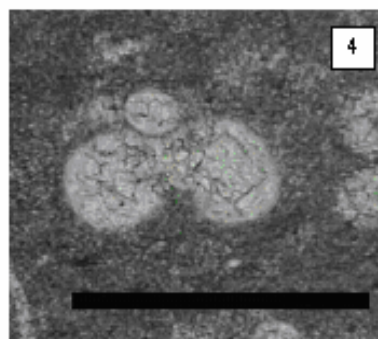
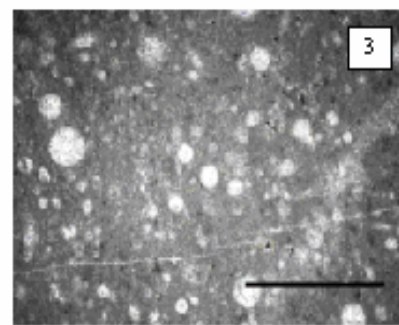
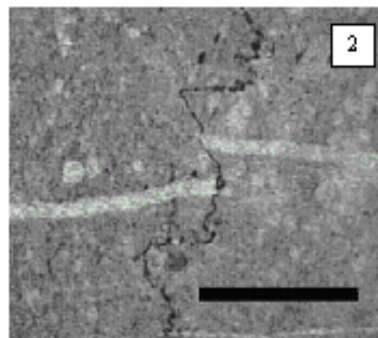
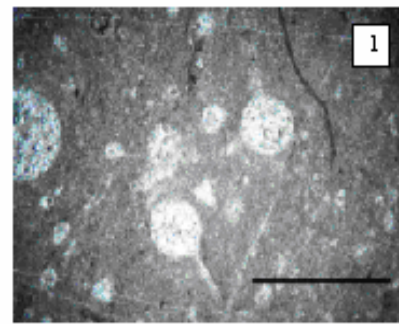
CAÑÓN EL ÁLAMO



MICROFACIES

MICROFACIES			MF1	MF2	MF 3	MF 2				MF4				MF5			
FORMACIÓN			Formacion cupido										C.Tamaulipas				
NUMERO DE MUESTRA			1-0	1-10	1-21	1-21A	1-30	2-14	2-17	3-15	3-30	4-22	4-30	5-2	5-4	5-4.5	
TEXTURA	MUDSTONE			float	X	X	float							X			
	WACKESTONE		X	sto			sto		X	X	X	X	X			X	
	PACKSTONE			ne			ne								X	X	
	GRAINSTONE							X									
ALOEQUIMICOS	INTRACLASTOS			S	S		S	S	F		F	S				S	
	OOLITAS																
	PELETS			S	S	S	S	?	?		S	S				S	
	CORTOIDES																
	CALCIESFERAS		S						S	R		A	F	A	A	A	
	CALPIONELIDOS								F	F	F	F	F		S	S	
	RADIOLARIOS		A														
	ESPONGAS																
	CORALES																
	ANELIDOS			R													
	BRIOZOARIOS																
	EQUINODERMOS			F	S	S	S	S	S	S	S	S	S	S	F	S	
	ESPINAS DE EQUINODERMOS			S	R	R	R	R	S								
	CRINOIDES			S	R					S	S						
	PK CRINOIDES																
	BRAQUIOPODOS			S	S	S	F	F	S		S	S	S		S	S	
	FORAM.	ROOTALIDO PK		S		R	R			F	F	F	F	A	F	F	F
		ROOTALIDO BT		S	F	S	S	F	F	F	R	S		R	R	R	R
		MILIOLIDOS			F	F	S	R	F								
		ORBITOLINIDOS															
	OSTRACODOS			S	F	F	R	S	F	F	A	S	S	S	S	S	
	MOLLUSCOS																
	BIVALVOS																
	GASTEROPODOS																
	CEFALOPODOS																
	ALGA ROJA																
	ALGA VERDE			R													
	PARTICULAS TERRIGENAS																
	MINERALES AUTIGENICOS					T	T						T		T		R

MICROFACIES			MF 5				MF 1		MF6					MF1				
FORMACIÓN			Caliza Tamaulipas															
NUMERO DE MUESTRA			5•6	5•7A	5•8	5•9	5•12	6•5	6•10	6•15	6•20	6•25	6•30	7•4	7•10	9•11		
TEXTURA	MUDSTONE							X	X	X	X	X	X	X	X	X		
	WACKSTONE		X	X	X	X	X											
	PACKSTONE																	
	GRAINSTONE																	
ALOEQUIMICOS	INTRACLASTOS		F	S														
	OOLITAS																	
	PELETS		F	S														
	CORTOIDES																	
	CALCIESFERAS		F	A	F	S	F						F	A	A	S		
	CALPIONELIDOS		S	S	S													
	RADIOLARIOS					A	S	R	R	A	A	A	F?	F	S	F		
	ESPONGAS																	
	CORALES																	
	ANELIDOS																	
	BRIOZOARIOS																	
	EQUINODERMOS		S		S	R	R			R								
	ESPINAS DE EQUINODERMOS																	
	CRINOIDES																	
	PK CRINOIDES																	
	BRAQUIOPODOS		F	R	S	R	R											
	FORAM.	ROITALIDO PK		A	F	S	R	R	S	S	S	S	S	S	S	R	S	
		ROITALIDO BT		S	S	R	T	T		T		S						
		MILIOLIDOS																
		ORBITOLINIDOS																
	OSTRACODOS		F	R	R					S	R	S	S	S			S	
	MOLLUSCOS																	
	BIVALVOS																	
	GASTEROPODOS																	
	CEFALOPODOS																	
	ALGA ROJA																	
	ALGA VERDE																	
PARTICULAS TERRIGENAS																		
MINERALES AUTIGENICOS				S	S	S	S	R	R	R	F	S	S	S	R	R		



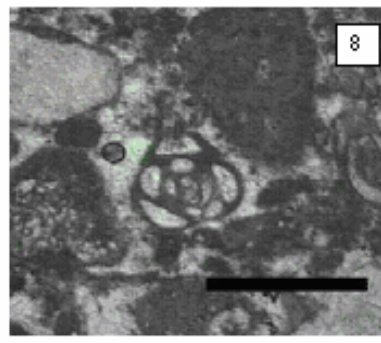
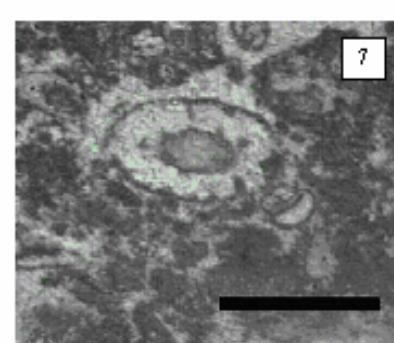
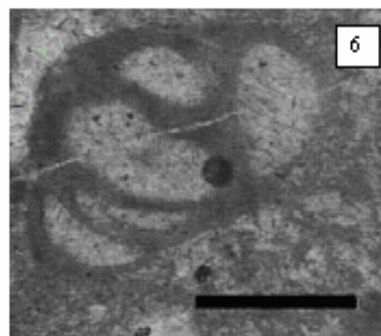
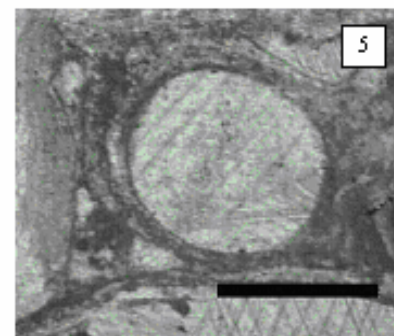
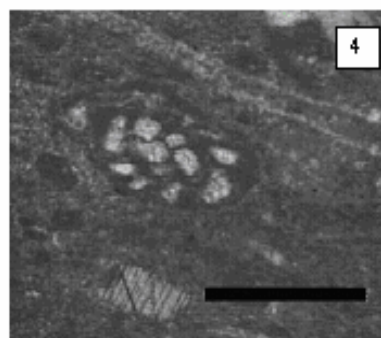
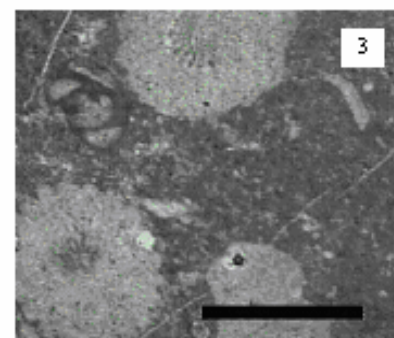
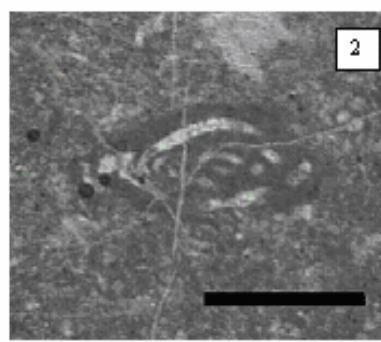
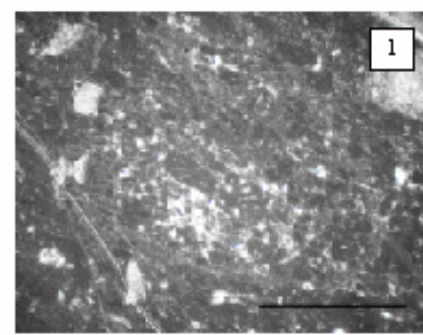
Globigerinoides ferreolensis

Microfacies 1

Wackestone y mudstone de calciesferas y radiolarios calcificados.

foraminíferos planctónicos, ostrácodos y foraminíferos bentónicos.

Nerítico externo a pelágico.



Microfacies 2

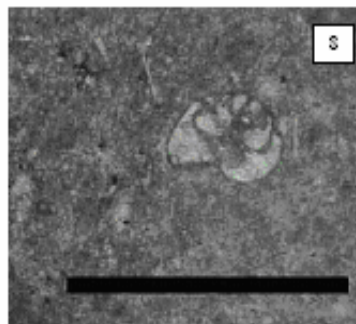
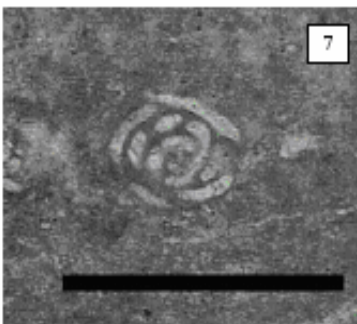
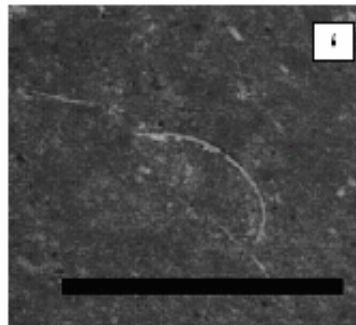
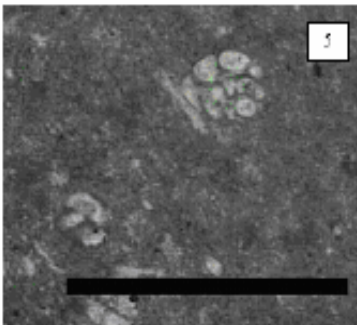
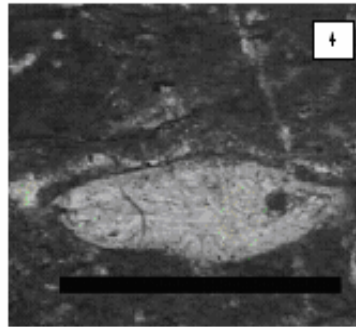
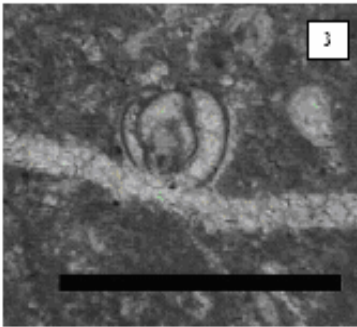
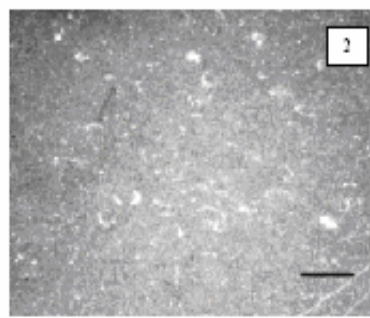
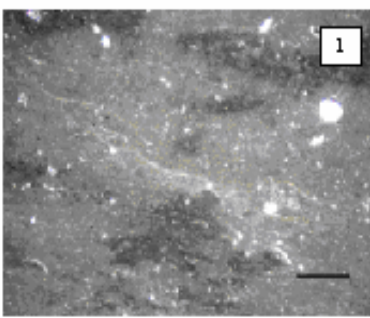
Wackestone y grainstone de foraminíferos bentónicos, miliólidos y braquiópodos. Ostrácodos, equinodermos, pelets e intraclastos y espinas de equinodermos.

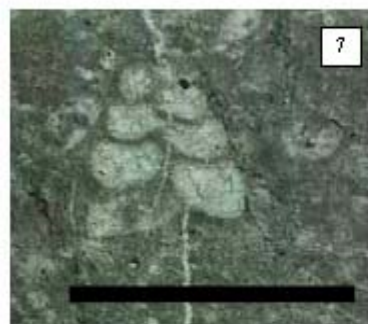
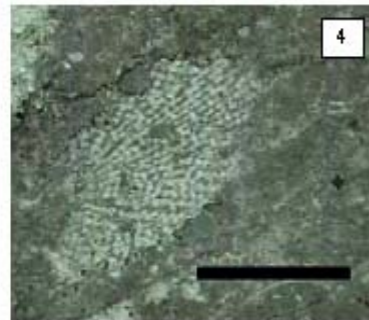
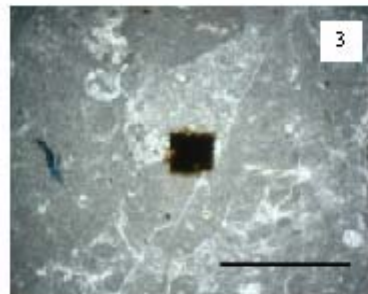
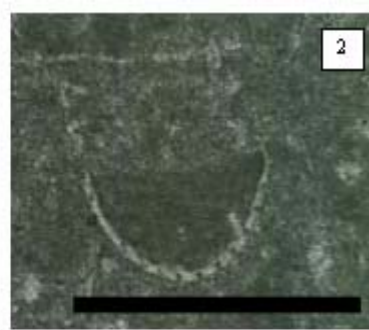
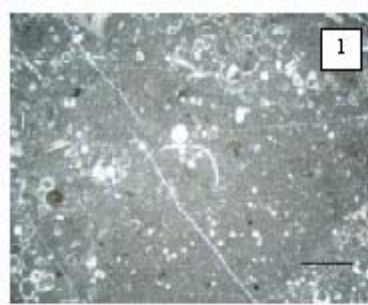
Nerítico medio con desarrollo de lagunas y bancos.

Microfacies 3

Mudstone de miliólidos y ostrácodos, Foraminíferos bentónicos, braquiópodos, equinodermos, pelets e intraclastos, foraminíferos planctónicos, crinoides, espinas de equinodermos.

Nerítico medio con desarrollo de lagunas.

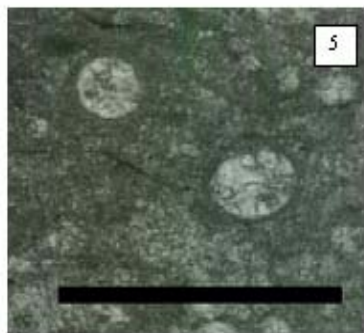
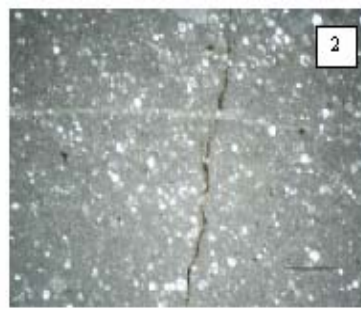
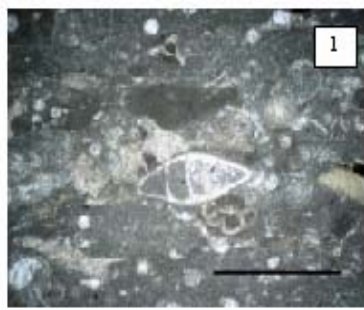




Microfacies 4

Wackestone de
foraminíferos planctónicos,
calpionelidos y ostrácodos.
Pelets e intraclastos,
foraminíferos bentónicos,
calciesferas, braquiópodos,
crinoides, equinodermos y espinas
de equinodermos.

Nerítico externo.

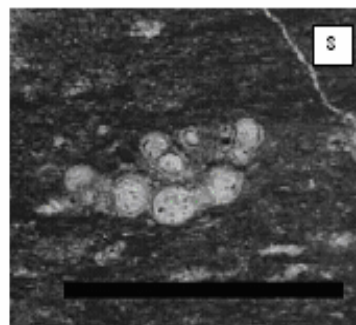
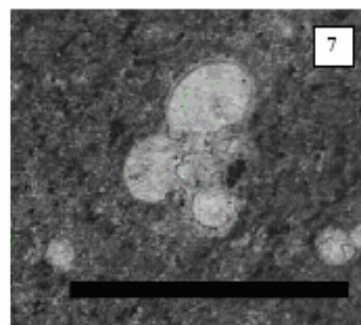
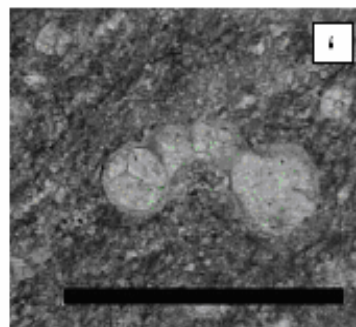
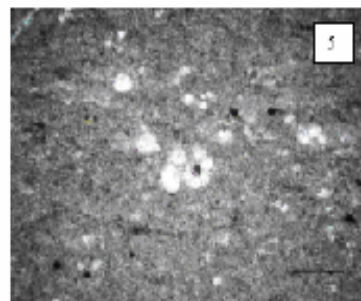
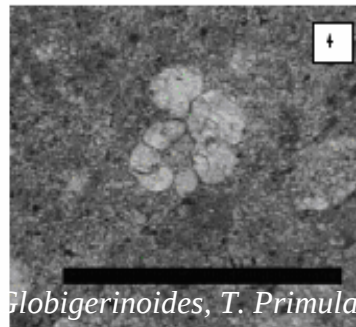
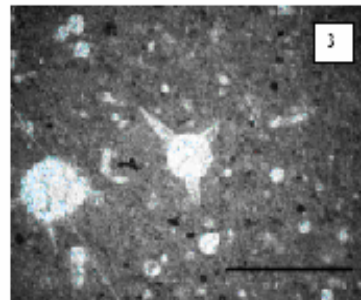
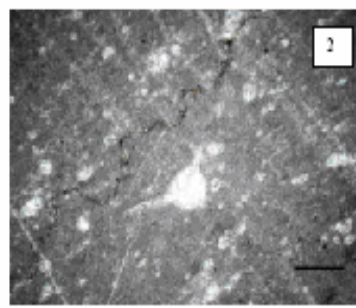
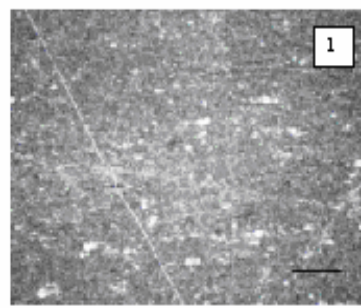


Microfacies 5

Wackestone-packstone de calcisferas y foraminíferos planctónicos.

Calpionelidos, ostrácodos, equinodermos, braquiópodos, pelets e intraclastos y foraminíferos bentónicos.

Nerítico externo.

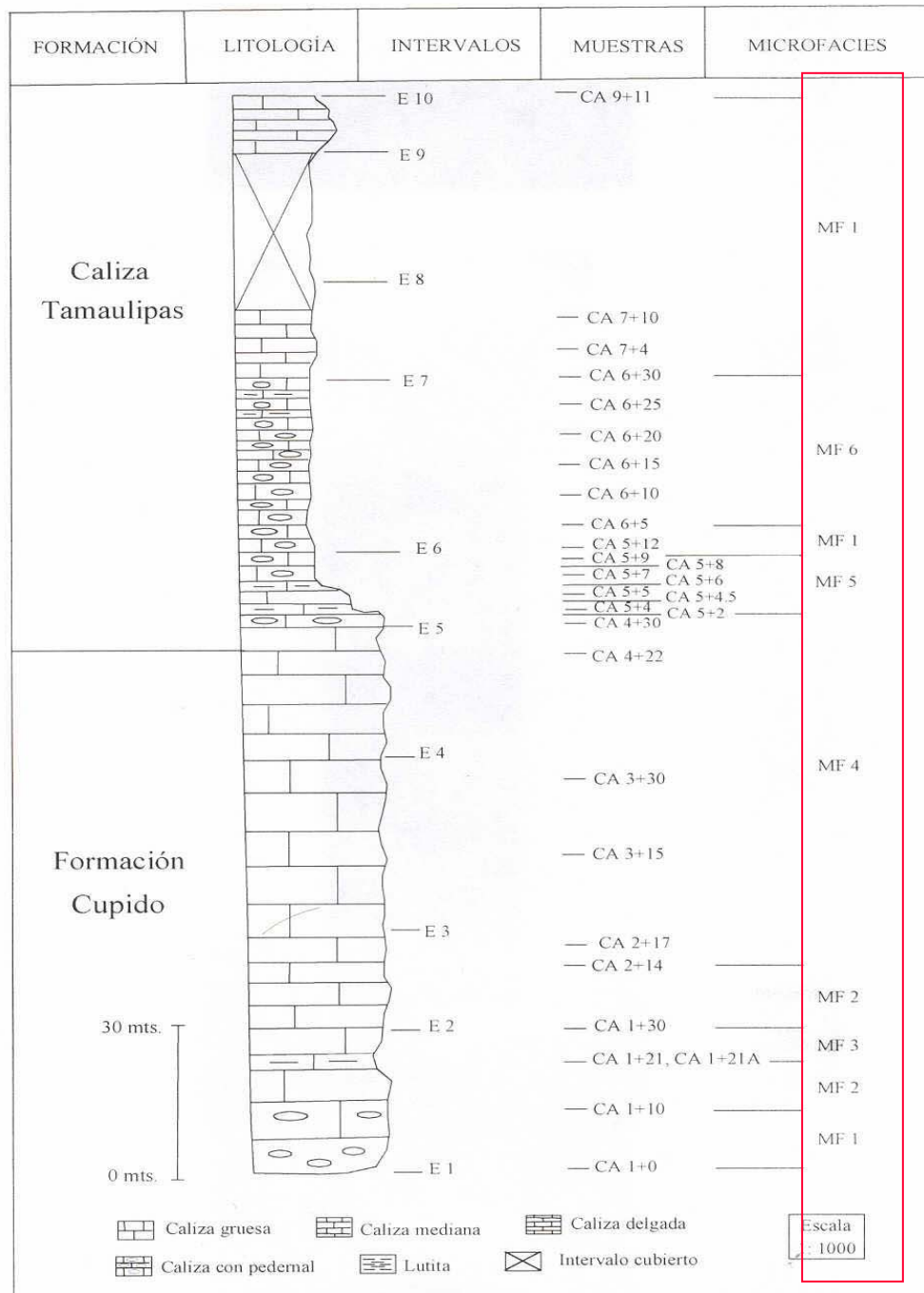


Microfacies 6

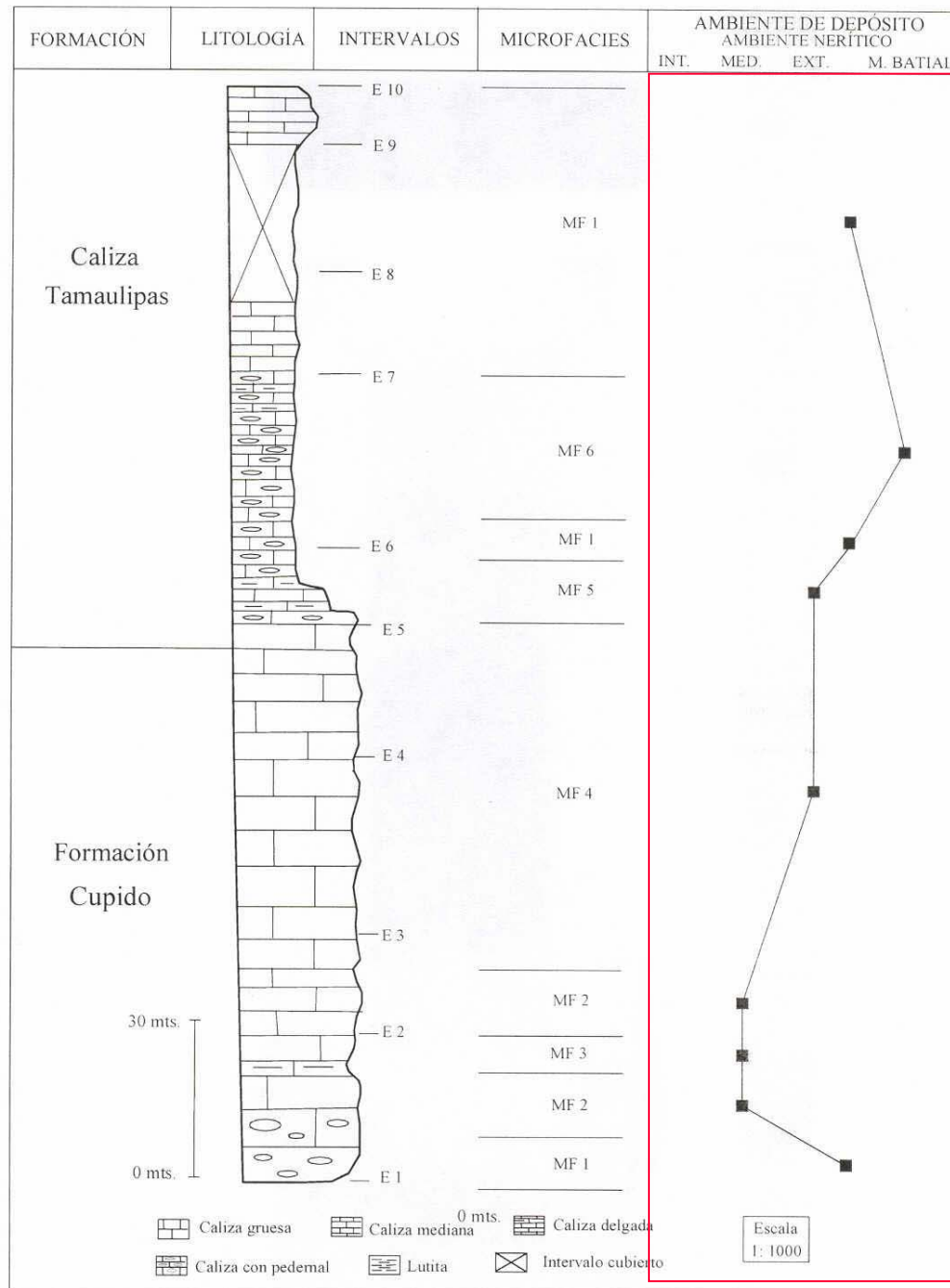
Mudstone de radiolarios.
Foraminíferos planctónicos
ostrácodos, equinodermos de
foraminíferos bentónicos.

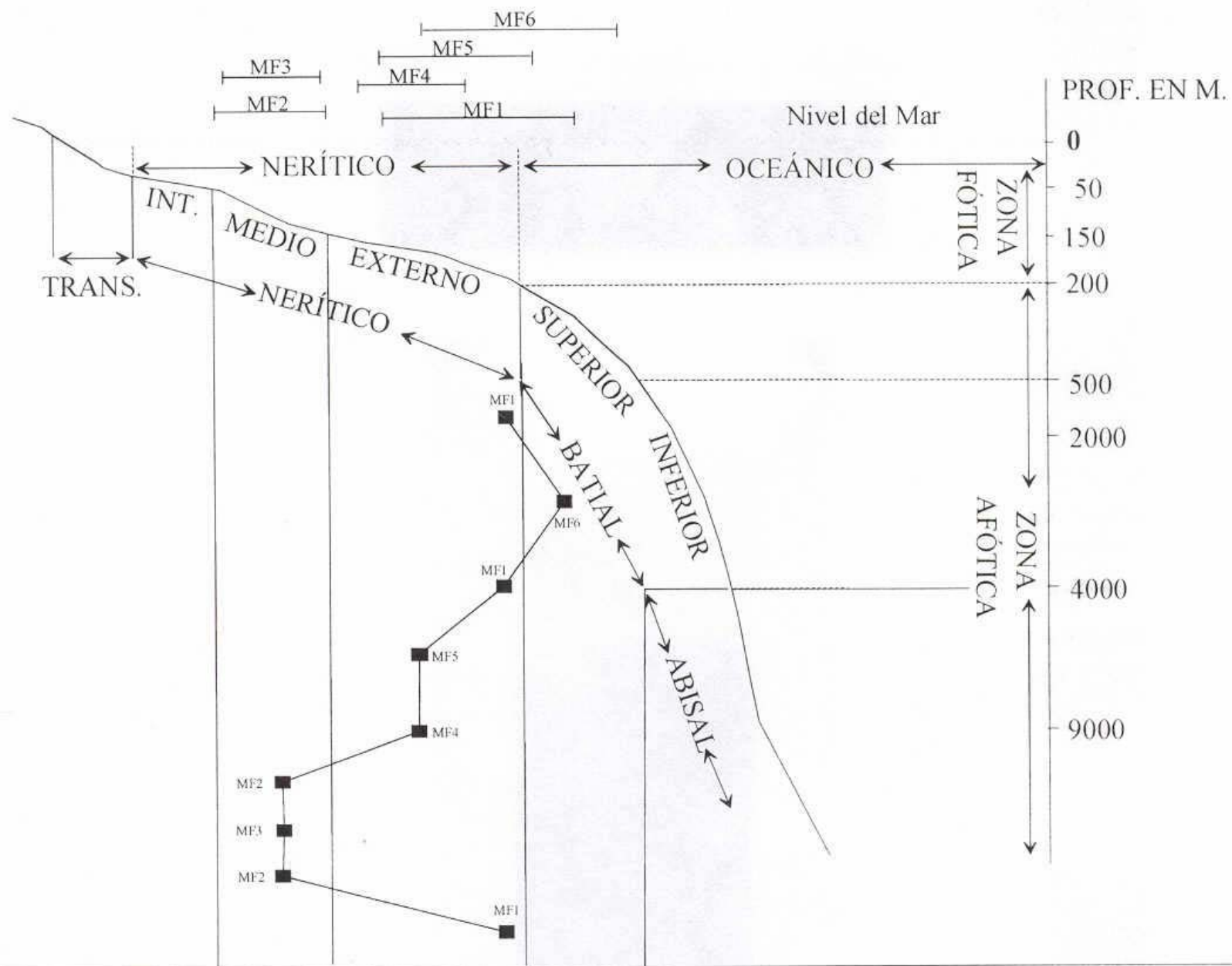
Nerítico externo a marino
batial.

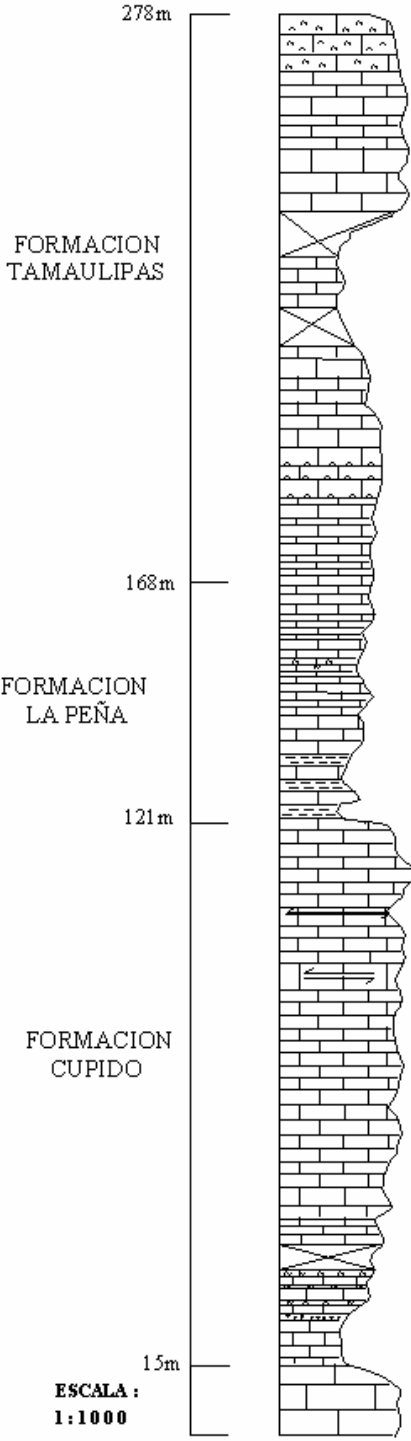
CAÑÓN EL ÁLAMO



CAÑÓN EL ÁLAMO







SECCIÓN EL MULATO

Caliza gruesa a masiva intercalada con caliza delgada margosa.

Lutita alternando con capas de marga y caliza nodular.

Caliza gruesa a masiva intercalada con caliza delgada margosa.



Formación Tamaulipas

Formación La Peña

MICROFACIES

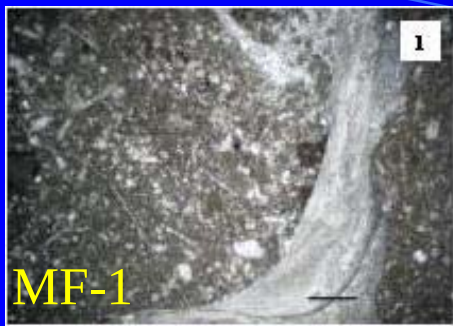
[illegible][illegible]

MICROFACIES		MF10	MF9	MF10	MF11				MF12	MF13	MF12	MF11				
FORMACIÓN				FORMACIÓN LA PEÑA												
NUMERO DE MUESTRA		7+30	8+5	8+10	8+18	8+27	9+0	9+0A	9+5	9+10	9+15	9+20	9+20A	9+25	9+30	
TEXTURA	MUDSTONE												X			
	WACKESTONE	X	X	X	X	X	X	X	X	X	X	X		X	X	
	PACKSTONE															
	GRAINSTONE															
ALQUIMICOS	INTRACLASTOS															
	LOOLITAS															
	PELETS				T	F	T		R						T	
	CORTOIDES															
	CALCIESFERAS	S			S						F	F				
	CALPIONELIDOS															
	RADIOLARIOS					A	A	A	A		F	F		A	A	
	ESPONGAS															
	CORALES															
	ANELIDOS															
	BRIOZOARIOS															
	EQUINODERMOS															
	ESPINAS DE EQUINODERMOS	R	S	S	R											
	CRINOIDES		R													
	PK CRINOIDES			R												
	BRAQUIOPODOS		T													
	FORAM.	ROITALIDO PK	S	S	F	S	F	F	F	S	F	R	S	F	S	F
		ROITALIDO BT	R	R		S										
		MILIOLIDOS														
		ORBITOLINIDOS														
	OSTRACODOS	R	R	S											R	
	MOLLUSCOS	S	R	R	S	R			R	R	T		T	R	S	
	BIVALVOS															
	GASTEROPODOS	R	R		T							R				
	CEFALOPODOS		T													
	ALGA ROJA															
	ALGA VERDE															
	PARTICULAS TERRIGENAS															
	MINERALES AUTIGENICOS	X	X	X		X	X		X							

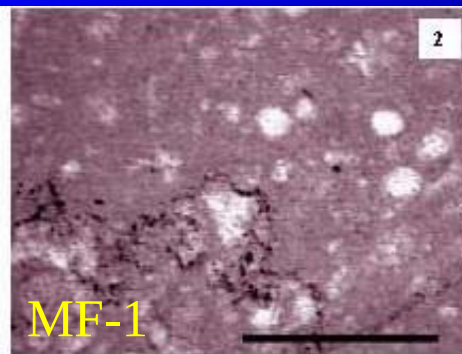
MICROFACIES			MF11		MF13			MF14								MF15		
FORMACIÓN							FORMACIÓN TAMAULIPAS											
NUMERO DE MUESTRA			9+33	10+0	10+6	10+11	10+15	10+20	10+25	10+30	11+5	11+10	11+15	11+23	11+23A	11+30		
TEXTURA	MUDSTONE												X					
	WACKESTONE		X	X	X	X	X	X	X	X	X	X		X	X	X		
	PACKSTONE																	
	GRAINSTONE																	
ALQUIMICOS	INTRACLASTOS																	
	OOLITAS																	
	PELETS																	
	CORTOIDES																	
	CALCIESFERAS			S		S	S											
	CALPIONELIDOS							S	S	S	F	R	R	A	A	S		
	RADIOLARIOS		A	R	T	S	T				R		R			A		
	ESPONGAS																	
	CORALES																	
	ANELIDOS																	
	BRIOZOARIOS															T		
	EQUINODERMOS																	
	ESPINAS DE EQUINODERMOS						S	R	R			R				R		
	CRINOIDES														T	R		
	PK CRINOIDES																	
	BRAQUIOPODOS																	
	FORAM.	ROTALIDO PK		S	S	S	F	F	F	F	S	A		F	F	F	F	
		ROTALIDO BT						S	S	S	S	R	R	T		T	R	
		MILIOLIDOS																
		ORBITOLINIDOS																
OSTRACODOS			R	R	R	R	R	R	S	S	T	R	R	S	S			
MOLLUSCOS			T	R		S	R	R	R			T	T					
BIVALVOS																		
GASTEROPODOS						S									T			
CEFALOPODOS																		
ALGA ROJA																		
ALGA VERDE																		
PARTICULAS TERRIGENAS																		
MINERALES AUTIGENICOS						X	X	X	X		X	X		X	X			

MICROFACIES		MF15						MF16									
FORMACIÓN		FORMACIÓN TAMAULIPAS															
NUMERO DE MUESTRA		12+5	12+10	12+15	12+20	12+25	12+30	13+5	15+0	15+5	15+10	15+19	18+0	18+5	18+10		
TEXTURA	MUDSTONE																
	WACKESTONE	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	PACKSTONE																
	GRAINSTONE																
ALOCUIMICOS	INTRACLASTOS							F	A	S	F	F	F	F	R		
	OOLITAS																
	PELETS									A	F	F	R	R			
	CORTOIDES																
	CALCIESFERAS																
	CALPIONELIDOS	S	R	R	R	R	R	R	R	R	R	R	R	R	R		
	RADIOLARIOS	S	S	F	F	F	A	F	F	A	F	F	S	F	F		
	ESPONGAS																
	CORALES																
	ANELIDOS																
	BRIOZOARIOS																
	EQUINODERMOS																
	ESPINAS DE EQUINODERMOS	R	R	R		R		S							R		
	CRINOIDES	S	S	S	S	S	S	S									
	PK CRINOIDES						R	S	R	T	R	S	F	F	S		
	BRAQUIOPODOS																
	FORAM.	ROTALIDO PK	F	F	F	F	F	F	F	S	R	F	F	S	F	F	
		ROTALIDO BT	R	R	R	S	R	R	R	R		R	R	R	R	R	
		MILIOLIDOS															
ORBITOLINIDOS																	
OSTRACODOS																	
MOLLUSCOS		S	S	S	S	S	F	S	S	R	S	S	F	F	S		
BIVALVOS								T		T	T				T		
GASTEROPODOS																	
CEFALOPODOS																	
ALGA ROJA																	
ALGA VERDE																	
PARTICULAS TERRIGENAS																	
MINERALES AUTIGENICOS		X	X	X		X	X	X			X				X		

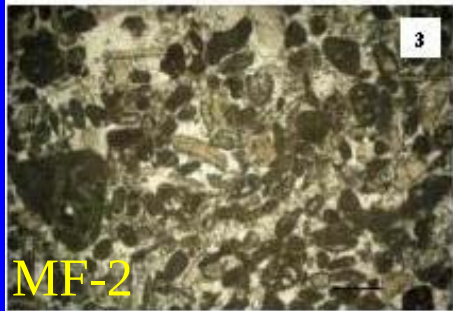
MICROFACIES		MF16		MF15		MF17										
FORMACIÓN		FORMACIÓN TAMAULIPAS														
NUMERO DE MUESTRA		18+15	18+20	18+25	18+30	19+5	19+10	19+15	19+20	20+5	20+10	20+15	20+20	20+25	20+30	
TEXTURA	MUDSTONE															
	WACKESTONE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	PACKSTONE															
	GRAINSTONE															
ALQUIMICOS	INTRACLASTOS	S														
	OOLITAS															
	PELETS															
	CORTOIDES															
	CALCIESFERAS					F	F	F	S	S	F	A	A	A	A	
	CALPIONELIDOS	R	R	T	T	R	R	R	R	R	R	T	T	T	T	
	RADIOLARIOS	S	S	A	A		?	?	S	A	T	R	R	S	R	
	ESPONGAS															
	CORALES															
	ANELIDOS															
	BRIOZOARIOS															
	EQUINODERMOS															
	ESPINAS DE EQUINODERMOS	R	R	R	R											
	CRINOIDES															
	PK CRINOIDES	S	F	F	F	F	F	F	F	F	F	S	F	S	S	
	BRAQUIOPODOS															
	FORAM.	ROTALIDO PK	F	F	F	F	S	S	F	F	F	S	S	S	F	S
		ROTALIDO BT		T	T			R	T	T		T		T		
		MILIOLIDOS														
		ORBITOLINIDOS														
	OSTRACODOS	S	F	S	S	S	S	S	F	S	S	S	S	S	S	
	MOLLUSCOS			T	T	R						T				
	BIVALVOS															
	GASTEROPODOS															
	CEFALOPODOS															
	ALGA ROJA															
	ALGA VERDE															
	PARTICULAS TERRIGENAS															
MINERALES AUTIGENICOS				X				X		X		X			X	



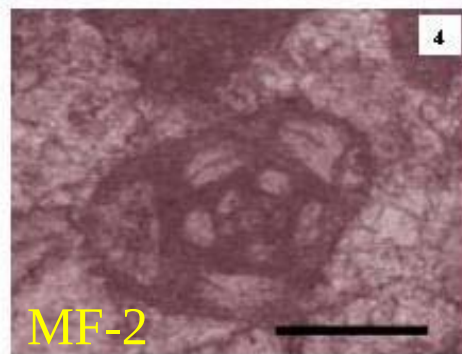
MF-1



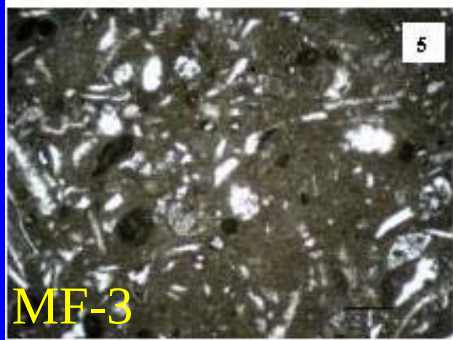
MF-1



MF-2



MF-2



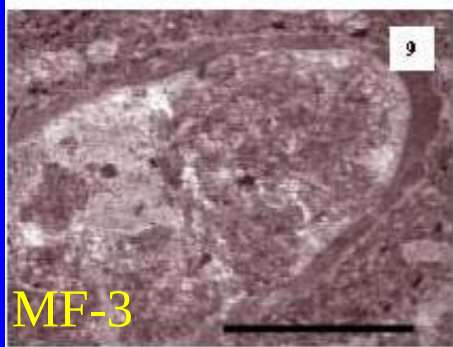
MF-3



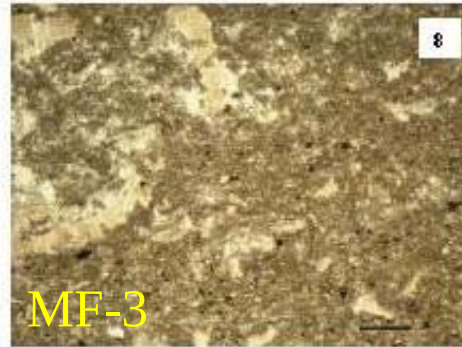
MF-4



MF-2



MF-3



MF-3

MF-1

Wakestone de Braquiópodos, calciesferas y moluscos. Espinas de equinodermos, ostrácodos, crinoides y gasterópodos.

- Marino somero nerítico medio

MF-2

Grainstone de intraclastos. Equinodermos, crinoides, braquiópodos, Cortoides, anélidos y espinas de equinodermos. miliólidos incluidos en intraclastos.

- Marino somero nerítico interior a medio

MF-3

Mudstone-Wackestone de Moluscos.

Intraclastos, formainíferos bentónicos, ostrácodos, espinas de equinodermos y miliólidos, briozoarios y gasterópodos.

- Marino somero nerítico lagunar

MF-4

Wackestone de equinodermos y crinoides. Ostracodos Moluscos y espinas de equinodermos.

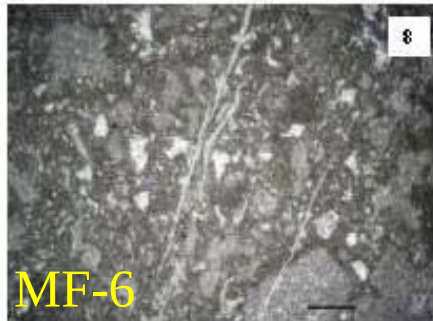
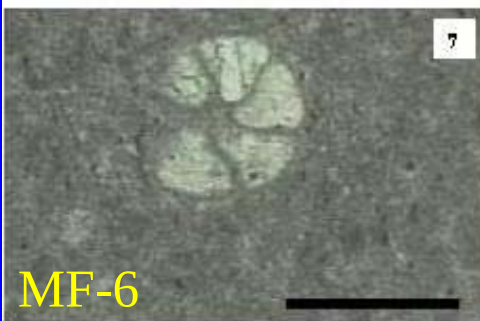
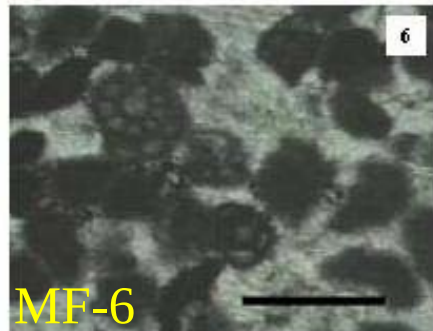
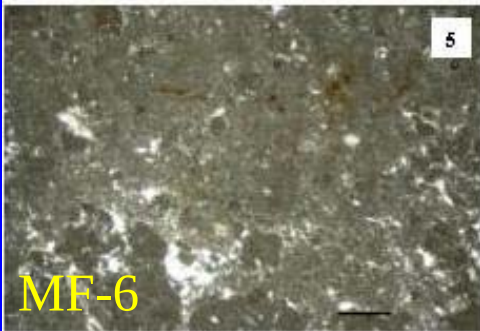
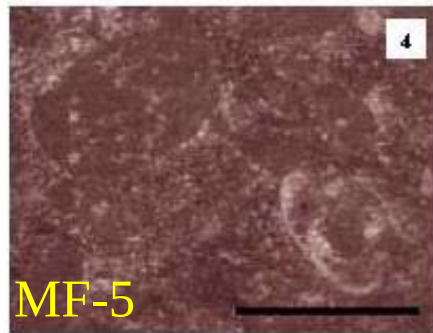
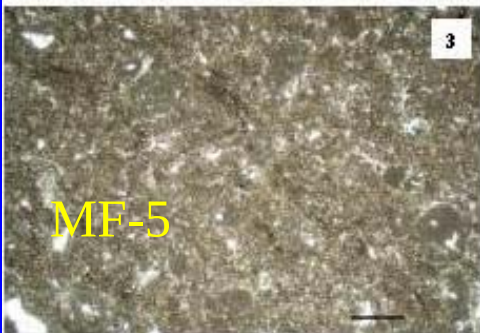
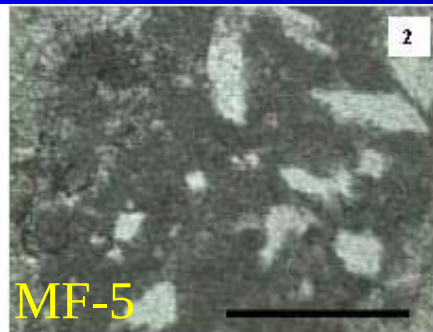
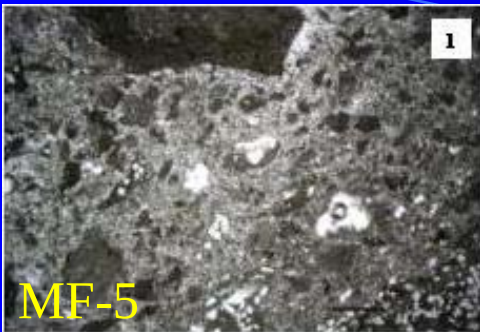
- Marino somero nerítico medio

MF-5

Wackestone de intraclastos.

Ostrácodos, fragmentos y espinas de equinodermos, moluscos, y Anélidos

Marino somero nerítico medio



MF-6

Mudstone-Wackestone de Pellets e intraclastos

Foraminíferos bentónicos, miliólidos, ostrácodos, y espinas de equinodermos

Marino somero lagunar

MF-7

Grainstone de Oolitas.

Pellets, intraclastos, gasterópodos

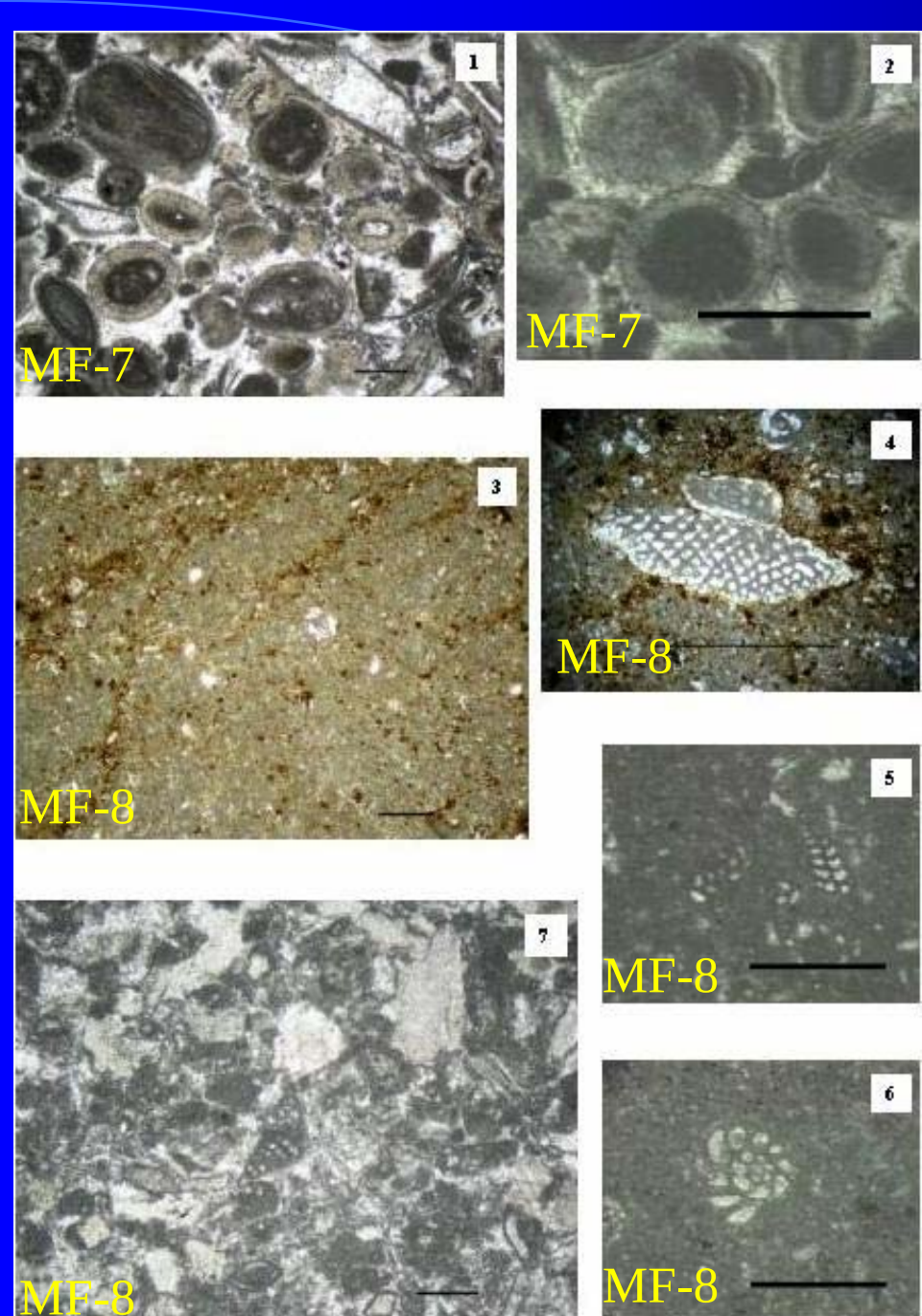
- Marino somero nerítico medio

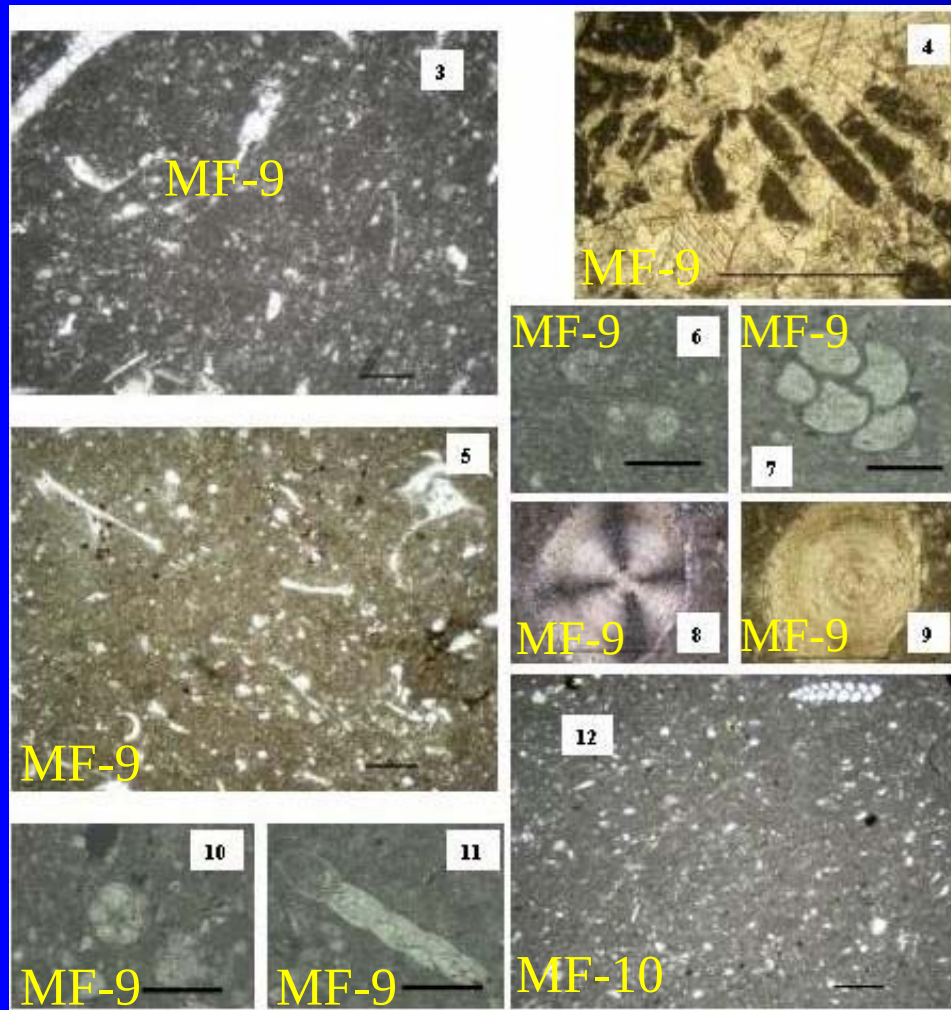
MF-8

Wackestone-Packestone de orbitolínidos y miliólidos

Fragmentos y espinas de equinodermos, moluscos, fragmentos de corales, espinas de esponjas

- Marino somero a nerítico medio



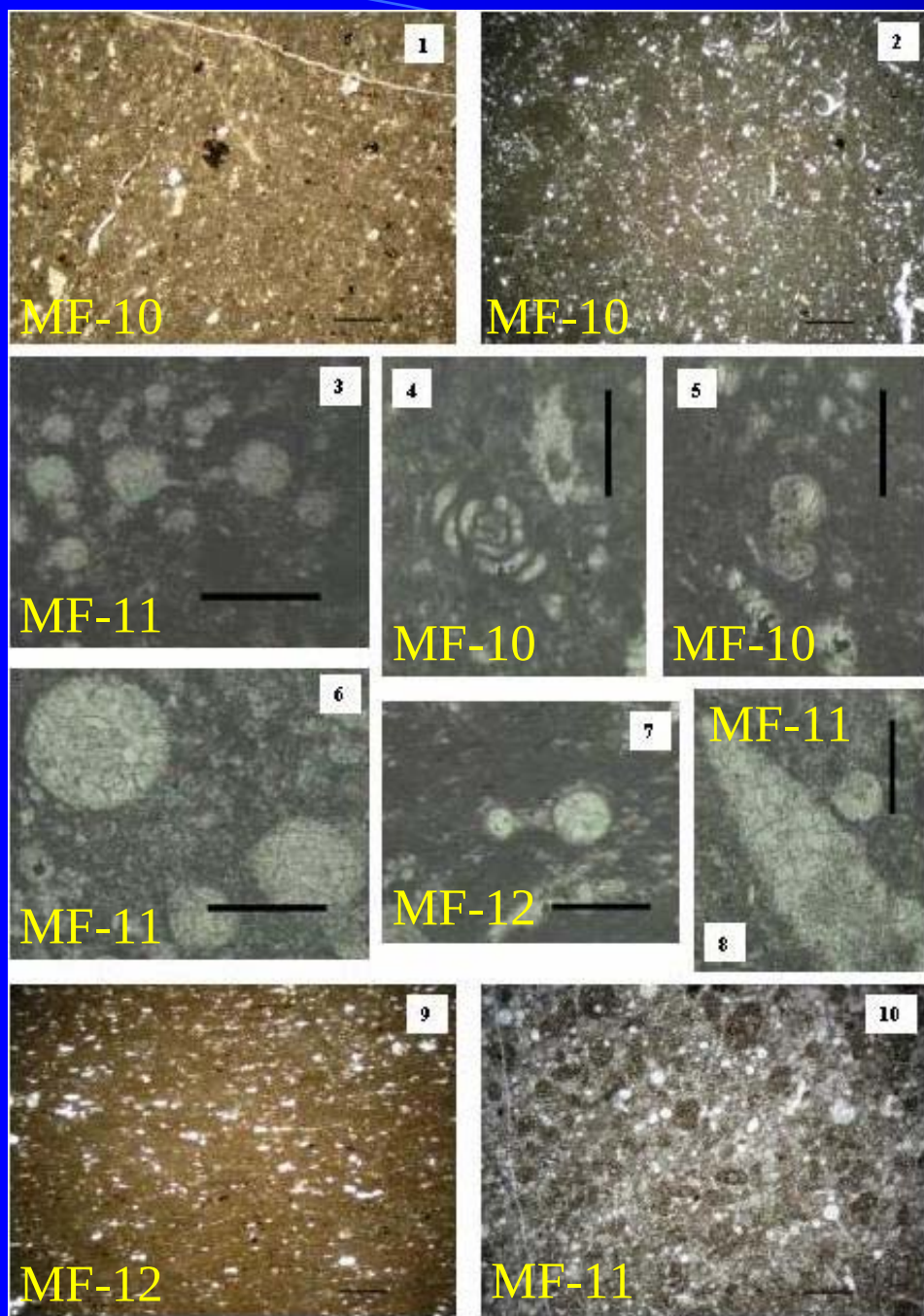


MF-9

Mudstone-Wackestone de
moluscos y equinodermos.

Foraminíferos planctónicos y bentónicos,
ostrácodos, gasterópodos y crinoides.

- Marino somero nerítico



MF-10

Wakestone de Pellets.

Foraminíferos planctónicos y bentónicos, calciesferas, espinas de equinodermos, moluscos, ostrácodos y gasterópodos.

- Marino somero nerítico medio a exterior

MF-11

Wackestone de foraminíferos planctónicos.

Moluscos, ostrácodos, calciesferas, espinas de equinodermos.

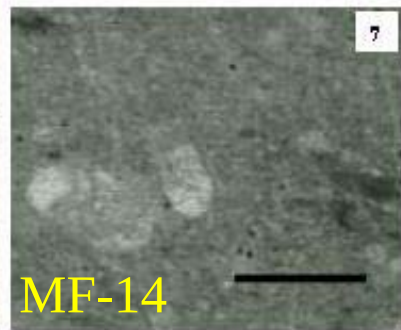
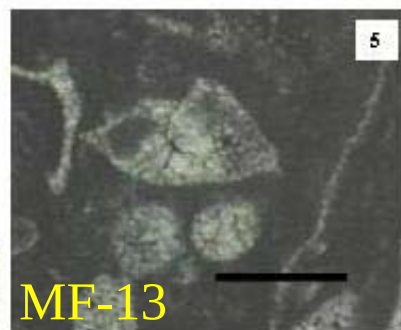
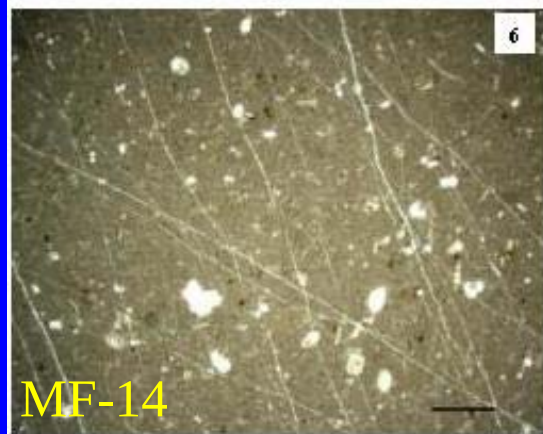
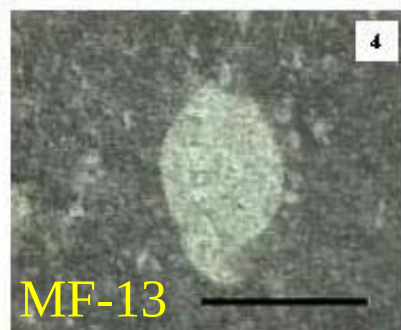
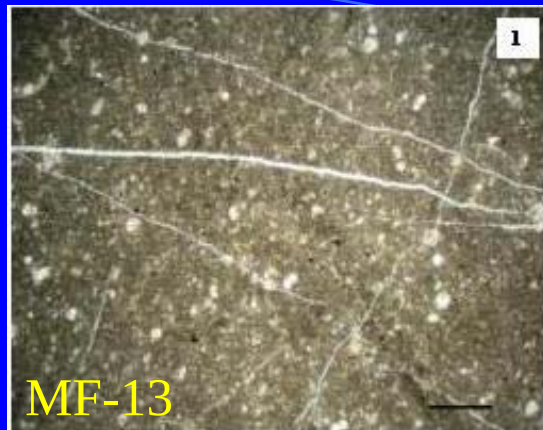
- Marino nerítico exterior

MF-12

Wackestone de Radiolarios.

Foraminíferos planctónicos, moluscos, ostrácodos, espinas de equinodermos.

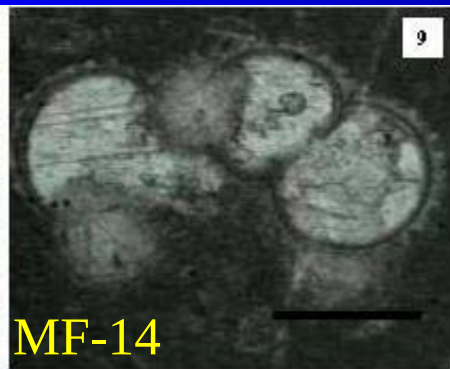
- Marino nerítico exterior a pelágico



MF-13

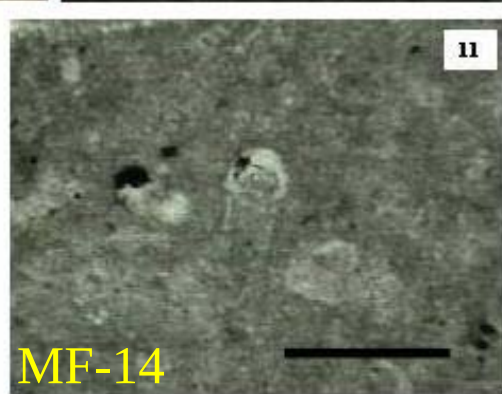
Wackestone de foraminíferos
planctónicos.
Ostrácodos y moluscos.

- Marino nerítico exterior a mar
abierto pelágico



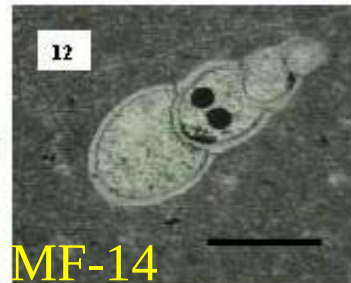
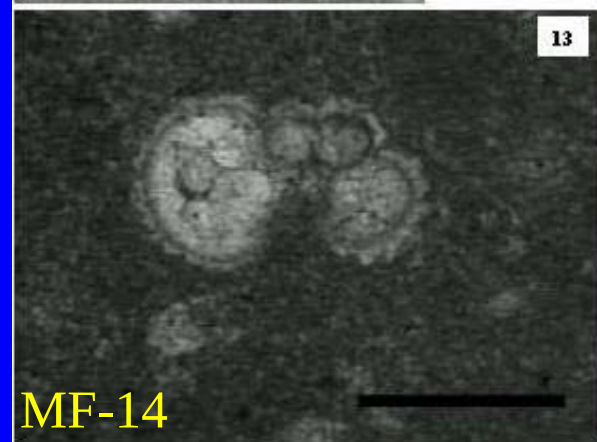
MF-14

MF-14

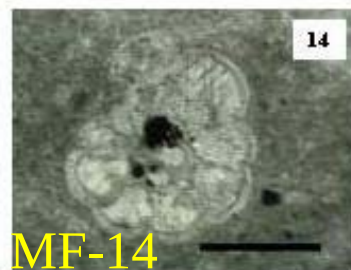


MF-14

MF-14



MF-14

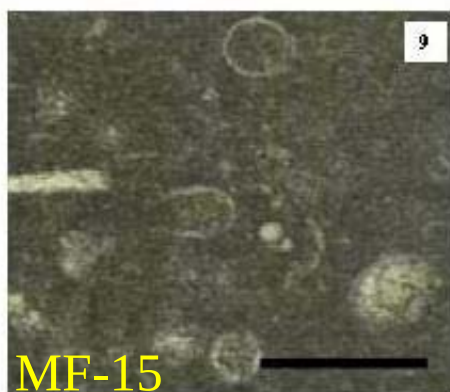
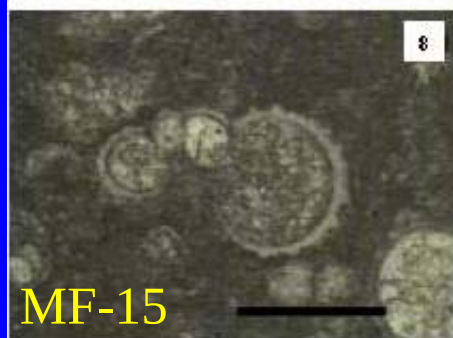
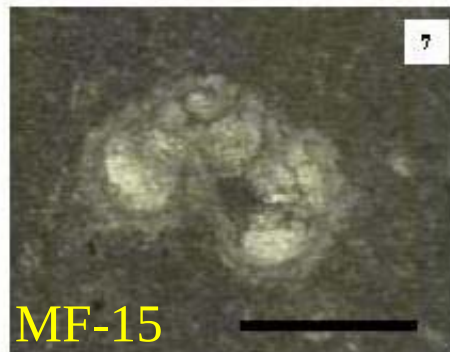
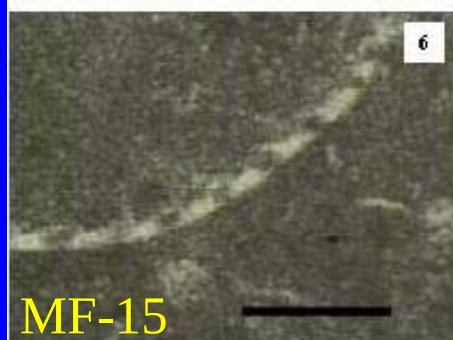
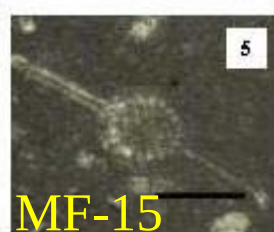
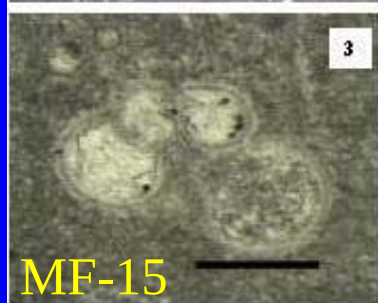
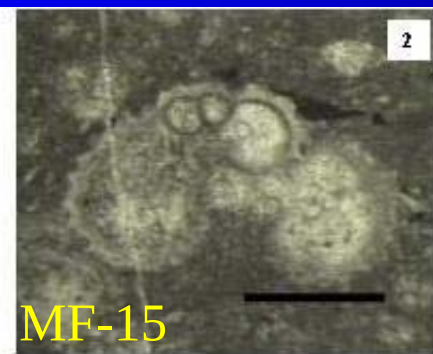


MF-14

MF-14

Mudstone-Wackestone de
foraminíferos y calpionélidos
Ostrácodos, moluscos, espinas de
equinodermos y radiolarios.

- Marino nerítico exterior a pelágico de mar abierto.



MF-15

Wackestone de foraminíferos
planctónicos

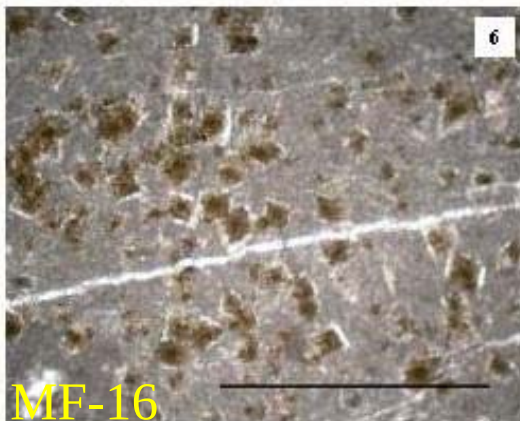
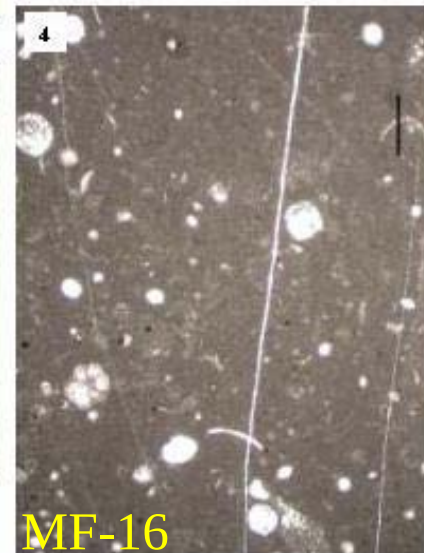
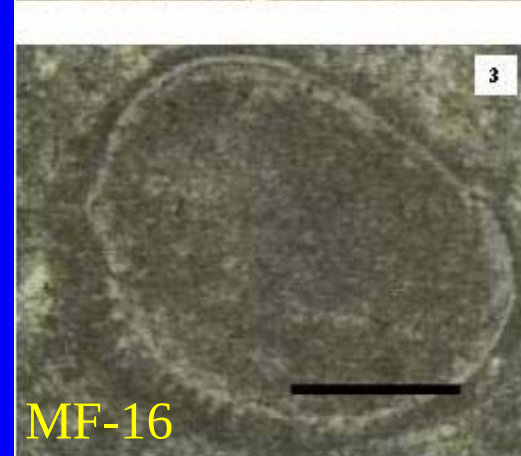
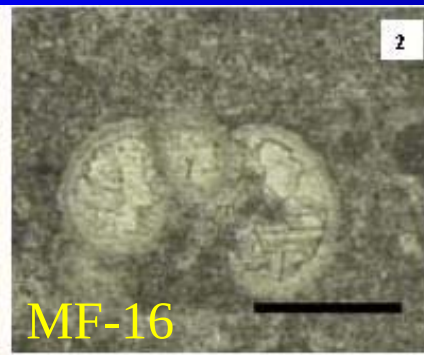
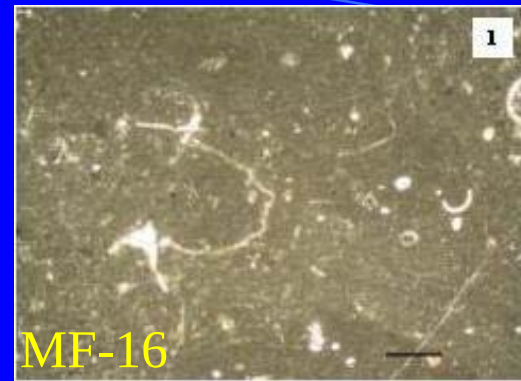
Moluscos, crinoides calpionélidos, espinas de
equinodermos, radiolarios, y ostrácodos.

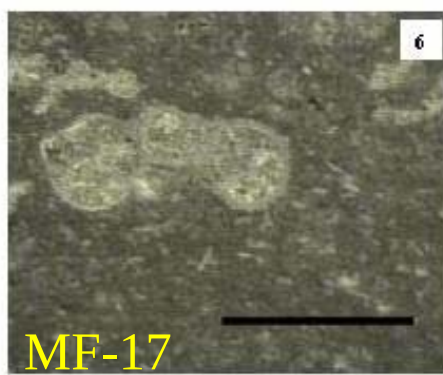
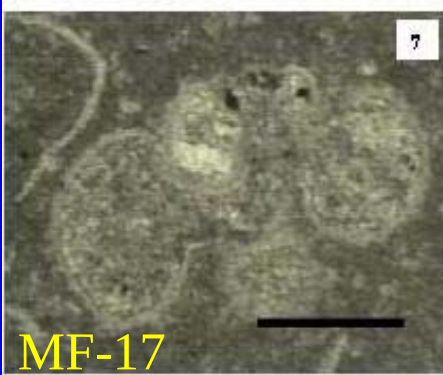
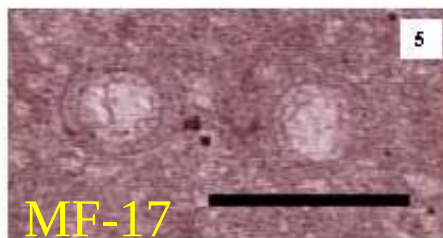
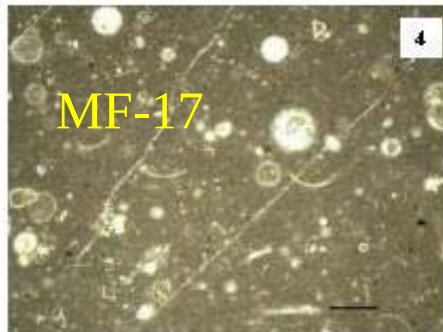
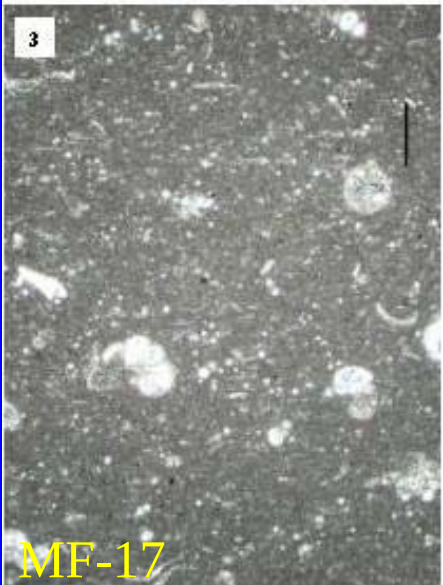
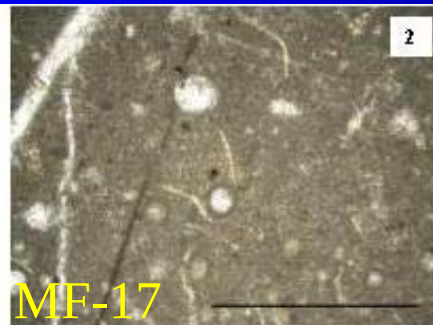
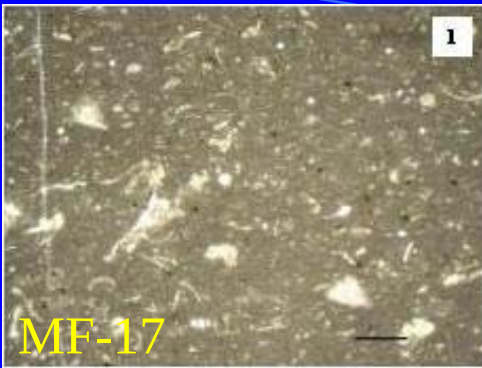
- Mar abierto pelágico

MF-16

Wackestone de intraclastos y
Foraminíferos planctónicos
Pellets, crinoides planctónicos,
radiolarios, ostracodos, moluscos,
calpionélidos, espinas de equinodermos y
bivalvos.

- Marino nerítico exterior a mar
abierto pelágico





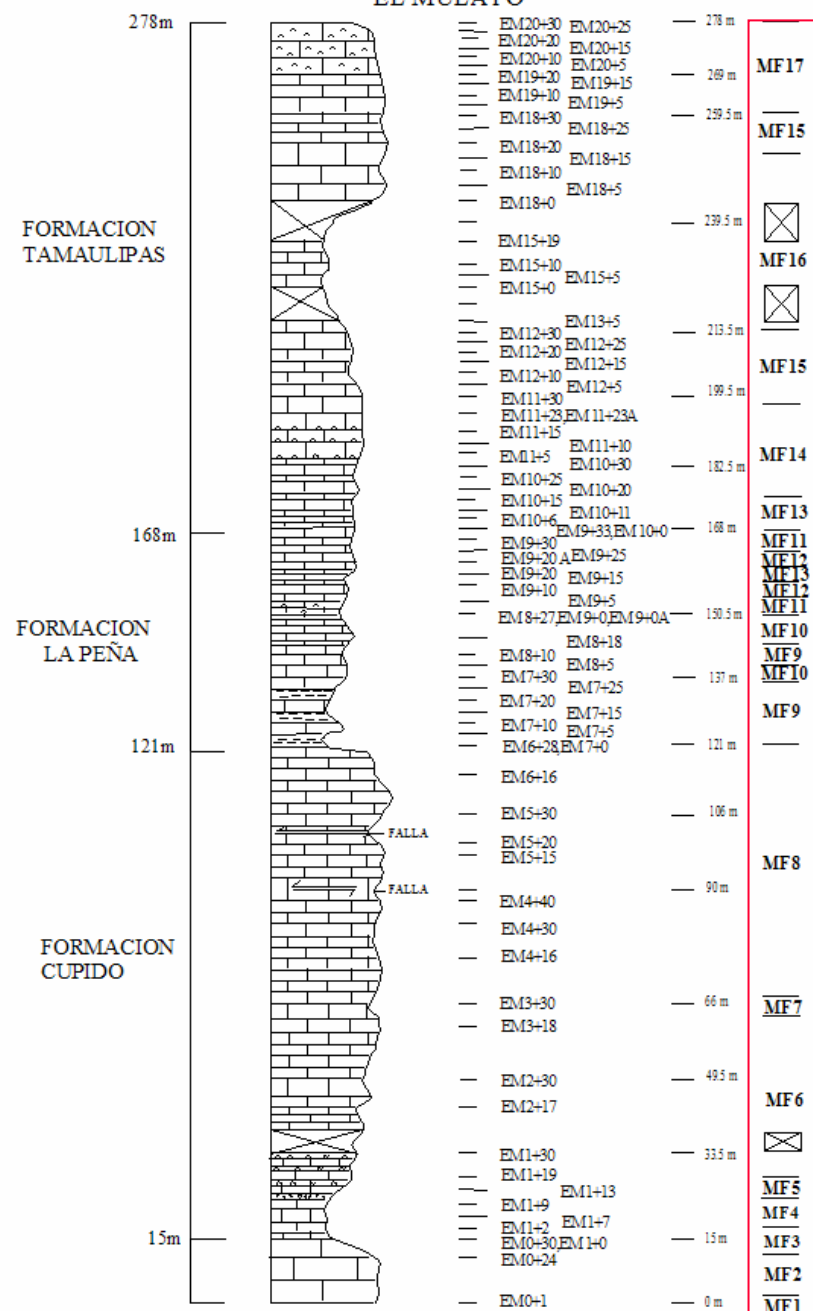
MF-17

Wackestone de calciesferas y
crinoides planctonicos

Foraminíferos planctónicos, radiolarios,
ostrácodos, calpionélidos, foraminíferos
bentónicos.

- Marino nerítico exterior pelágico

EL MULATO



ESCALA: 1:1000

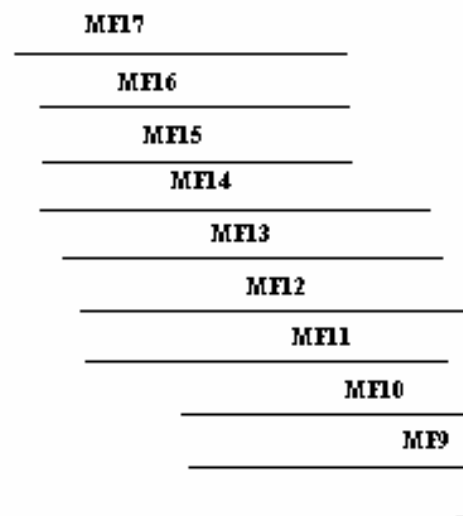


FIG. 1



1	2	3	4	5	6	7	8	9	10
Cuenca	Plataforma externa	Margen de Plataforma	Ante-arrecife	Arrecife	Bancos de arena	Laguna costera	Plataforma restringida	Plataforma evaporítica	Continente



