

RESUMEN - CONCLUSION

De acuerdo con el memorandum n° 00/178.3 n° 71B, de fecha 9 de Septiembre de 1988, me permito remitirle el informe sobre el estudio de siete (7) muestras de superficie, ubicadas en el valle El Dátil, en la isla de Margarita.

Como podrá apreciar, los resultados obtenidos por nannoplancton calcáreo, son muy concretos y taxativos.

MUESTRA :

NE-24

Grupo Punta Carnero

Formación El Dátil

Isla de Margarita, Venezuela oriental.

EDAD :

Eoceno medio.

ZONA :

Zona NP 15

Zona de *Chiphragmalithus alatus*.

NANNOPLANKTON CALCAREO ENCONTRADO :

Sphenolithus pseudoradians

Zyghrablithus bijugatus

Thoracosphaera

Reticulofenestra aff. *umbilica*

Reticulofenestra sp.

Helicosphaera sp.

Ericsonia sp.

Ericsonia formosa

Coccolithus sp.

Coccolithus pelagicus

Discoaster deflandrei

Chiphragmalithus alatus

Cyclococcolithus sp.

Prediscosphaera cretacea re TRABAJADA del Cretáceo.

Ranges of Calcareous Nannoplankton Datum Indicators Paleogene		Calcareous Nannoplankton Zones		Nannoplankton Species	
Stage	Zone	Zone	Zone	Species	Species
Oligocene	Upper	EP28	Trifarina angulosa Zone	Trifarina angulosa	Trifarina angulosa
		EP25	Sphenolithus ciperoensis Zone	Sphenolithus ciperoensis	Sphenolithus ciperoensis
		EP24	Sphenolithus dietzei Zone	Sphenolithus dietzei	Sphenolithus dietzei
		EP23	Sphenolithus praedictatus Zone	Sphenolithus praedictatus	Sphenolithus praedictatus
	Lower	EP22	Helicosphaera reticulata Zone	Helicosphaera reticulata	Helicosphaera reticulata
		EP21	Ericsonia subdistans Zone	Ericsonia subdistans	Ericsonia subdistans
	Upper	EP20	Sphenolithus pseudoradians Zone	Sphenolithus pseudoradians	Sphenolithus pseudoradians
		EP19	Isomalithus recurvus Zone	Isomalithus recurvus	Isomalithus recurvus
		EP18	Chlamydomonas oamaruensis Zone	Chlamydomonas oamaruensis	Chlamydomonas oamaruensis
		EP17	Discoaster salomonensis Zone	Discoaster salomonensis	Discoaster salomonensis
Eocene	Middle	EP16	Discoaster lami nodifer Zone	Discoaster lami nodifer	Discoaster lami nodifer
		EP15	Discoaster lami nodifer Zone	Discoaster lami nodifer	Discoaster lami nodifer
		EP14	Discoaster lami nodifer Zone	Discoaster lami nodifer	Discoaster lami nodifer
		EP13	Discoaster lami nodifer Zone	Discoaster lami nodifer	Discoaster lami nodifer
	Lower	EP12	Marthasterites tribrachiatus Zone	Marthasterites tribrachiatus	Marthasterites tribrachiatus
		EP11	Discoaster binaeus Zone	Discoaster binaeus	Discoaster binaeus
	Upper	EP10	Marthasterites constrictus Zone	Marthasterites constrictus	Marthasterites constrictus
		EP9	Discoaster halli radiatus Zone	Discoaster halli radiatus	Discoaster halli radiatus
		EP8	Helicolithus rivellii Zone	Helicolithus rivellii	Helicolithus rivellii
		EP7	Discoaster mehleri Zone	Discoaster mehleri	Discoaster mehleri
Paleocene	Middle	EP6	Helicolithus kleinpellii Zone	Helicolithus kleinpellii	Helicolithus kleinpellii
		EP5	Puccinolithus lymaniformis Zone	Puccinolithus lymaniformis	Puccinolithus lymaniformis
		EP4	Ellipsolithus macellus Zone	Ellipsolithus macellus	Ellipsolithus macellus
		EP3	Chlamydomonas distans Zone	Chlamydomonas distans	Chlamydomonas distans
	Lower	EP2	Chlamydomonas distans Zone	Chlamydomonas distans	Chlamydomonas distans
		EP1	Marthasterites constrictus Zone	Marthasterites constrictus	Marthasterites constrictus
	Upper	EP0	Marthasterites constrictus Zone	Marthasterites constrictus	Marthasterites constrictus
		EP0	Marthasterites constrictus Zone	Marthasterites constrictus	Marthasterites constrictus
		EP0	Marthasterites constrictus Zone	Marthasterites constrictus	Marthasterites constrictus
		EP0	Marthasterites constrictus Zone	Marthasterites constrictus	Marthasterites constrictus

MUESTRA :
 NE-28
 Grupo Punta Carnero
 Formación El Dátil
 Isla de Margarita, Venezuela oriental.

EDAD :
 Eoceno medio.

ZONA :
 NP 15
 Zona de *Chiphragmalithus alatus*.

NANNOPLANKTON CALCAREO ENCONTRADO :

Reticulofenestra sp.
Reticulofenestra aff. *umbilica*
Sphenolithus pseudoradians
Ericsonia formosa
Discoaster sp.
Sphenolithus sp.
Ericsonia sp.
Chiphragmalithus alatus
Helicosphaera sp.
Helicosphaera del grupo *compacta*
Discoaster cf. *binodosus*
Reticulofenestra umbilica

		Ranges of Calcareous Nannoplankton Datum Indicators		Favosites	
		Calcareous Nannoplankton Zones			
MIOC	MIOC	MIOC	MIOC	MIOC	MIOC
Oligocene	Upper	EP1	Trifarina angulosa Zone		
		EP2	Sphenolithus ciperoensis Zone		
		EP3	Sphenolithus distans Zone		
		EP4	Sphenolithus pseudoradians Zone		
	Middle	EP5	Sphenolithus pseudoradians Zone		
		EP6	Sphenolithus pseudoradians Zone		
	Lower	EP7	Sphenolithus pseudoradians Zone		
		EP8	Sphenolithus pseudoradians Zone		
		EP9	Sphenolithus pseudoradians Zone		
		EP10	Sphenolithus pseudoradians Zone		
Eocene	Upper	EP11	Sphenolithus pseudoradians Zone		
		EP12	Sphenolithus pseudoradians Zone		
		EP13	Sphenolithus pseudoradians Zone		
		EP14	Sphenolithus pseudoradians Zone		
	Middle	EP15	Sphenolithus pseudoradians Zone		
		EP16	Sphenolithus pseudoradians Zone		
	Lower	EP17	Sphenolithus pseudoradians Zone		
		EP18	Sphenolithus pseudoradians Zone		
		EP19	Sphenolithus pseudoradians Zone		
		EP20	Sphenolithus pseudoradians Zone		
Paleocene	Upper	EP21	Sphenolithus pseudoradians Zone		
		EP22	Sphenolithus pseudoradians Zone		
		EP23	Sphenolithus pseudoradians Zone		
		EP24	Sphenolithus pseudoradians Zone		
	Middle	EP25	Sphenolithus pseudoradians Zone		
		EP26	Sphenolithus pseudoradians Zone		
	Lower	EP27	Sphenolithus pseudoradians Zone		
		EP28	Sphenolithus pseudoradians Zone		
		EP29	Sphenolithus pseudoradians Zone		
		EP30	Sphenolithus pseudoradians Zone		

MUESTRA :
NE-35
Grupo Punta Carnero
Formación El Dátil
Isla de margarita, Venezuela oriental.

EDAD :
Eoceno medio.

ZONA :
NP 15
Zona de Chiphragmalithus alatus.

NANNOPLANKTON CALCAREO ENCONTRADO :

Reticulofenestra umbilica
Reticulofenestra sp.
Discoaster deflandrei
Sphenolithus pseudoradians
Zyghrablithus bijugatus
Ericsonia sp.
Ericsonia formosa
Helicosphaera sp.
Coccolithus sp.
 Fragmento de *Helicosphaera euphratis* ??
Discoaster cf. *binodosus*
Discoaster barbadiensis
Chiasmolithus grandis
Discoaster barbadiensis
Chiphragmalithus alatus
Discoaster cf. *tanii*
Micrantholithus sp.
Discoaster sp.

Rango de Calcareous Nannoplankton Datum Indicators Paleogene		Calcareous Nannoplankton Zones		Rango de Calcareous Nannoplankton Datum Indicators Paleogene	
NUM.	Zone	NUM.	Zone	NUM.	Zone
Oligocene	Upper	EP75	Sphenolithus ciperoensis Zone	Eocene	Upper
		EP74	Sphenolithus elatensis Zone		
		EP73	Sphenolithus predictatus Zone		
Miocene	Lower	EP72	Helicopentapora reticulata Zone		Upper
		EP71	Ericsonia + subulitica Zone		
		EP70	Sphenolithus pseudoradians Zone		
Pliocene	Upper	EP69	Extremolites recurvus Zone		
		EP68	Chiasmolithus maculatus Zone		
		EP67	Discoaster nannopora Zone		
Pliocene	Lower	EP66	Discoaster tani Zone		
		EP65	Discoaster subulitica Zone		
		EP64	Discoaster lodoensis Zone		
Pliocene	Upper	EP63	Marthasterites tribrachiatum Zone		
		EP62	Discoaster binodosus Zone		
		EP61	Marthasterites cuneatus Zone		
Pliocene	Lower	EP60	Discoaster multiradiatus Zone		
		EP59	Helicolithus rindali Zone		
		EP58	Discoaster mulleri Zone		
Pliocene	Upper	EP57	Helicolithus kleinpell Zone		
		EP56	Pantelolithus typomorphus Zone		
		EP55	Ellipsolithus macellus Zone		
Pliocene	Lower	EP54	Chiasmolithus danicus Zone		
		EP53	Chiasmolithus laticus Zone		
		EP52	Marthasterites laticus Zone		
Pliocene	Upper	EP51	Retrolithus curvus/Retrolithus frequens Zone		
		EP50	Retrolithus curvus/Retrolithus frequens Zone		
		EP49	Retrolithus curvus/Retrolithus frequens Zone		

MUESTRA :

NE-39

Grupo Punta Carnero

Formación El Dátil

Isla de Margarita, Venezuela oriental.

EDAD :

Eoceno medio.

ZONA :

NP 16

Zona de *Discoaster tanii nodifer*.

CARATTERISTICA :

No se encontró *Chiphragmalithus alatus* ni *Helicosphaera compacta*.

NANNOPLANKTON CALCAREO ENCONTRADO :

Sphenolithus pseudoradians

Reticulofenestra umbilica

Zyghrablithus bijugatus

Ericsonia formosa

Coccolithus sp.

Discoaster sp.

Pontosphaera sp.

Reticulofenestra sp.

Discoaster cf. *barbadiensis*

[illegible]

MUESTRA :

NE-46

Grupo Punta Carnero

Formación Punta Mosquito

Isla de Margárita, Venezuela oriental.

EDAD :

Eoceno medio superior a Eoceno superior.

ZONA :

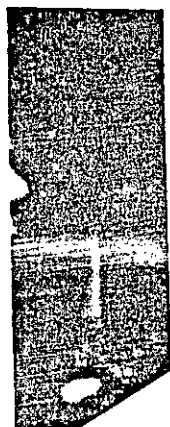
Zonas NP 17 a NP 20

Zonas de *Discoaster saipaniensis* a *Sphenolithus pseudoradians*.

CARACTERISTICA :

En la muestra se encontró *Sphenolithus celsus*, especie definida por HAQ en su trabajo "Paleogene calcareous Nannoflora. Oligocene of Syria". Dicha especie se caracteriza por una larga espina, seguida de una corta base cónica, de aproximadamente trece (13) elementos. Su característica bajo luz polarizada es que los elementos de la base a veces no son visibles, pero la espina se observa muy bien y presenta una bifurcación central muy marcada. Al rotar, la platina giratoria un lado polariza y el otro no, según la posición.

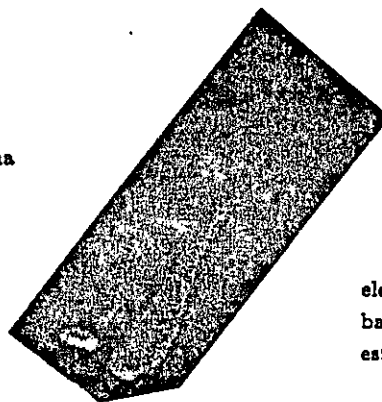
Luz polarizada.



bifurcación
central

al girar
la platina

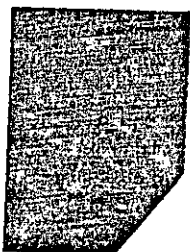
el elemento de la
base puede o no
distinguirse



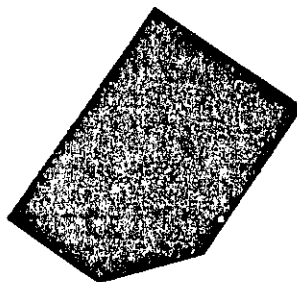
polarizada

elemento de la
base puede o no
estar presente

Esta característica lo hace diferente a *Sphenolithus predistentus*, definido por BRAMLETTE & WILCOXON, que se presenta como un *Sphenolithus* de pequeño tamaño, con una espina que puede o no estar ligeramente bifurcada en su parte terminal y que tiene una base muy distintiva.



o en otros casos



espina
ligeramente
dividida

Coccolithus sp.

Ranges of Calcareous Nanoplankton Datum Indicators Falsognone			Calcareous Nanoplankton Zones		Falsognone	
Zone	Indicator	Range	Zone	Indicator		
Oligocene	Upper	SP25	Trifarina angulosa Zone	SP25	Sphenolithus cipresensis Zone	
	Middle	SP26	Sphenolithus distans Zone	SP26	Sphenolithus distans Zone	
	Lower	SP27	Sphenolithus productus Zone	SP27	Sphenolithus productus Zone	
	Lower	SP28	Helicostaphyrea reticulata Zone	SP28	Helicostaphyrea reticulata Zone	
Eocene	Upper	SP29	Elonema subdistans Zone	SP29	Elonema subdistans Zone	
	Middle	SP30	Sphenolithus pseudoreticulatus Zone	SP30	Sphenolithus pseudoreticulatus Zone	
		SP31	Elonema reticulatum Zone	SP31	Elonema reticulatum Zone	
		SP32	Chamaelithus subdistans Zone	SP32	Chamaelithus subdistans Zone	
	Lower	SP33	Discosiderites subdistans Zone	SP33	Discosiderites subdistans Zone	
		SP34	Discosiderites subdistans Zone	SP34	Discosiderites subdistans Zone	
		SP35	Discosiderites subdistans Zone	SP35	Discosiderites subdistans Zone	
		SP36	Discosiderites subdistans Zone	SP36	Discosiderites subdistans Zone	
	Paleocene	Upper	SP37	Discosiderites subdistans Zone	SP37	Discosiderites subdistans Zone
		Middle	SP38	Discosiderites subdistans Zone	SP38	Discosiderites subdistans Zone
SP39			Discosiderites subdistans Zone	SP39	Discosiderites subdistans Zone	
Lower		SP40	Discosiderites subdistans Zone	SP40	Discosiderites subdistans Zone	
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Lower	SP253	Discosiderites subdistans Zone	SP253	Discosiderites subdistans Zone		
Lower	SP254	Discosiderites subdistans Zone	SP254	Discosiderites subdistans Zone		

MUESTRA :
NE-54
Grupo Punta Carnero
Formación Punta Mosquito
Isla de Margarita, Venezuela oriental.

EDAD :
Eoceno medio superior a Eoceno superior.

ZONA :
Zonas NP 17 a NP 20
Zonas de *Discoaster saipaniensis* a *Sphenolithus pseudoradians*.

CARACTERISTICA :
En esta muestra se presentan *Sphenolithus celsus*, *Sphenolithus predistentus*, *Helicosphaera compacta* y *Sphenolithus pseudoradians*.

NANNOPLANKTON CALCAREO ENCONTRADO :

Sphenolithus predistentus
Reticulofenestra umbilica
Reticulofenestra sp.
Helicosphaera compacta
Helicosphaera sp.
Ericsonia sp.
Ericsonia formosa
Coccolithus sp.
Thoracosphaera sp.
Zyghabliithus bijugatus
Sphenolithus pseudoradians

aseguir
edad de
ciperio
Oligoceno

DISCUSION :

Por el conjunto floral presente, nos encontramos entre la zona NP 17 y la zona NP 20. Ahora bien, si se toma en cuenta la presencia de *Helicosphaera compacta* se debería interpretar esta muestra como Eoceno superior zonas NP 18 a NP 20, ya que así esta ella dada en la sección tipo, sección ciperio de la isla de Trinidad. Mi opinión personal es que las *Helicosphaera compacta* encontradas no son típicamente características, ya que muchas de ellas las debí denominar "*Helicosphaera* del grupo compacta", por lo tanto me pronuncio en una posición conservadora de ubicar la muestra entre las zonas NP 17 a NP 20.

Ranges of Calcareous Nannoplankton Datum Indicators		Falcogene		Eocene		Oligocene		Miocene	
Calcareous Nannoplankton Zones		Falcogene		Eocene		Oligocene		Miocene	
Zone	Indicator	Zone	Indicator	Zone	Indicator	Zone	Indicator	Zone	Indicator
NP 20	<i>Triquetrorhabdulus carinatus</i> Zone	NP 20	<i>Sphenolithus pseudoradians</i> Zone	NP 20	<i>Helicosphaera compacta</i> Zone	NP 20	<i>Helicosphaera compacta</i> Zone	NP 20	<i>Helicosphaera compacta</i> Zone
NP 19	<i>Sphenolithus cypriensis</i> Zone	NP 19	<i>Sphenolithus cypriensis</i> Zone	NP 19	<i>Sphenolithus cypriensis</i> Zone	NP 19	<i>Sphenolithus cypriensis</i> Zone	NP 19	<i>Sphenolithus cypriensis</i> Zone
NP 18	<i>Sphenolithus distans</i> Zone	NP 18	<i>Sphenolithus distans</i> Zone	NP 18	<i>Sphenolithus distans</i> Zone	NP 18	<i>Sphenolithus distans</i> Zone	NP 18	<i>Sphenolithus distans</i> Zone
NP 17	<i>Sphenolithus predistentus</i> Zone	NP 17	<i>Sphenolithus predistentus</i> Zone	NP 17	<i>Sphenolithus predistentus</i> Zone	NP 17	<i>Sphenolithus predistentus</i> Zone	NP 17	<i>Sphenolithus predistentus</i> Zone
NP 16	<i>Helicosphaera reticulata</i> Zone	NP 16	<i>Helicosphaera reticulata</i> Zone	NP 16	<i>Helicosphaera reticulata</i> Zone	NP 16	<i>Helicosphaera reticulata</i> Zone	NP 16	<i>Helicosphaera reticulata</i> Zone
NP 15	<i>Ericsonia</i> "subtilis" Zone	NP 15	<i>Ericsonia</i> "subtilis" Zone	NP 15	<i>Ericsonia</i> "subtilis" Zone	NP 15	<i>Ericsonia</i> "subtilis" Zone	NP 15	<i>Ericsonia</i> "subtilis" Zone
NP 14	<i>Sphenolithus pseudoradians</i> Zone	NP 14	<i>Sphenolithus pseudoradians</i> Zone	NP 14	<i>Sphenolithus pseudoradians</i> Zone	NP 14	<i>Sphenolithus pseudoradians</i> Zone	NP 14	<i>Sphenolithus pseudoradians</i> Zone
NP 13	<i>Reticulofenestra umbilica</i> Zone	NP 13	<i>Reticulofenestra umbilica</i> Zone	NP 13	<i>Reticulofenestra umbilica</i> Zone	NP 13	<i>Reticulofenestra umbilica</i> Zone	NP 13	<i>Reticulofenestra umbilica</i> Zone
NP 12	<i>Discoaster saipaniensis</i> Zone	NP 12	<i>Discoaster saipaniensis</i> Zone	NP 12	<i>Discoaster saipaniensis</i> Zone	NP 12	<i>Discoaster saipaniensis</i> Zone	NP 12	<i>Discoaster saipaniensis</i> Zone
NP 11	<i>Discoaster thal. naderi</i> Zone	NP 11	<i>Discoaster thal. naderi</i> Zone	NP 11	<i>Discoaster thal. naderi</i> Zone	NP 11	<i>Discoaster thal. naderi</i> Zone	NP 11	<i>Discoaster thal. naderi</i> Zone
NP 10	<i>Discoaster subglobosus</i> Zone	NP 10	<i>Discoaster subglobosus</i> Zone	NP 10	<i>Discoaster subglobosus</i> Zone	NP 10	<i>Discoaster subglobosus</i> Zone	NP 10	<i>Discoaster subglobosus</i> Zone
NP 9	<i>Discoaster lodoensis</i> Zone	NP 9	<i>Discoaster lodoensis</i> Zone	NP 9	<i>Discoaster lodoensis</i> Zone	NP 9	<i>Discoaster lodoensis</i> Zone	NP 9	<i>Discoaster lodoensis</i> Zone
NP 8	<i>Discoaster biddulphi</i> Zone	NP 8	<i>Discoaster biddulphi</i> Zone	NP 8	<i>Discoaster biddulphi</i> Zone	NP 8	<i>Discoaster biddulphi</i> Zone	NP 8	<i>Discoaster biddulphi</i> Zone
NP 7	<i>Discoaster constrictus</i> Zone	NP 7	<i>Discoaster constrictus</i> Zone	NP 7	<i>Discoaster constrictus</i> Zone	NP 7	<i>Discoaster constrictus</i> Zone	NP 7	<i>Discoaster constrictus</i> Zone
NP 6	<i>Discoaster multiradiatus</i> Zone	NP 6	<i>Discoaster multiradiatus</i> Zone	NP 6	<i>Discoaster multiradiatus</i> Zone	NP 6	<i>Discoaster multiradiatus</i> Zone	NP 6	<i>Discoaster multiradiatus</i> Zone
NP 5	<i>Helicolithus riedeli</i> Zone	NP 5	<i>Helicolithus riedeli</i> Zone	NP 5	<i>Helicolithus riedeli</i> Zone	NP 5	<i>Helicolithus riedeli</i> Zone	NP 5	<i>Helicolithus riedeli</i> Zone
NP 4	<i>Discoaster subglobosus</i> Zone	NP 4	<i>Discoaster subglobosus</i> Zone	NP 4	<i>Discoaster subglobosus</i> Zone	NP 4	<i>Discoaster subglobosus</i> Zone	NP 4	<i>Discoaster subglobosus</i> Zone
NP 3	<i>Helicolithus kleinpellii</i> Zone	NP 3	<i>Helicolithus kleinpellii</i> Zone	NP 3	<i>Helicolithus kleinpellii</i> Zone	NP 3	<i>Helicolithus kleinpellii</i> Zone	NP 3	<i>Helicolithus kleinpellii</i> Zone
NP 2	<i>Helicolithus kleinpellii</i> Zone	NP 2	<i>Helicolithus kleinpellii</i> Zone	NP 2	<i>Helicolithus kleinpellii</i> Zone	NP 2	<i>Helicolithus kleinpellii</i> Zone	NP 2	<i>Helicolithus kleinpellii</i> Zone
NP 1	<i>Helicolithus kleinpellii</i> Zone	NP 1	<i>Helicolithus kleinpellii</i> Zone	NP 1	<i>Helicolithus kleinpellii</i> Zone	NP 1	<i>Helicolithus kleinpellii</i> Zone	NP 1	<i>Helicolithus kleinpellii</i> Zone

Formación Punta Mosquito
Isla de Margarita, Venezuela oriental.

Eoceno superior.

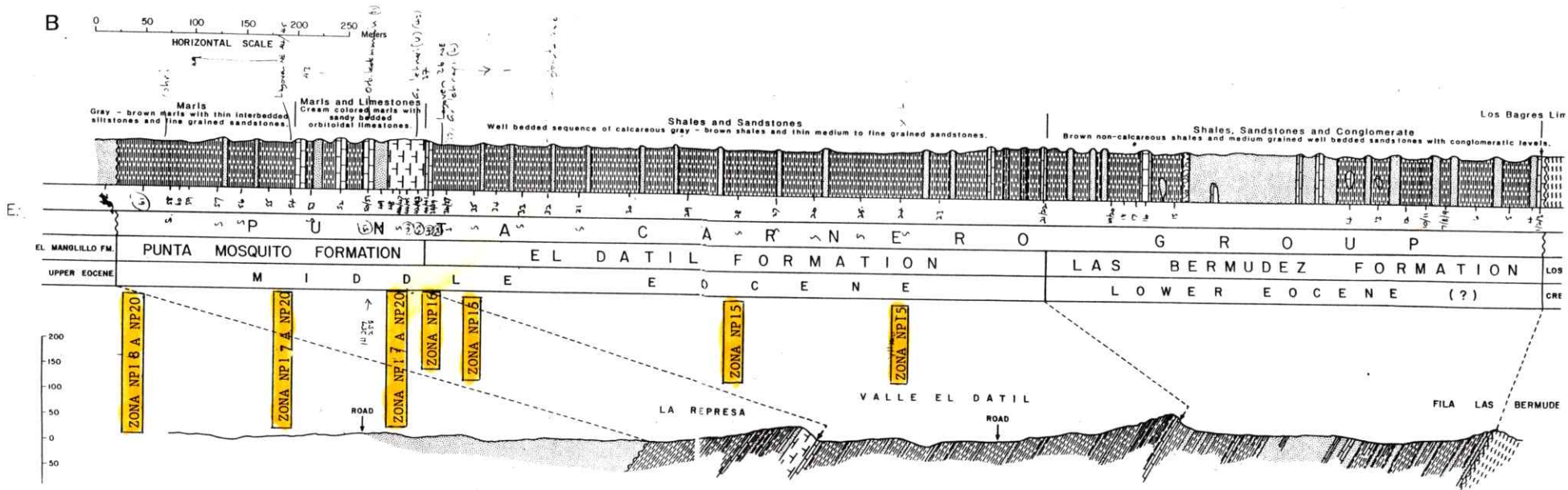
Zonas de *Chiasmolithus oamaruensis* a zona de *Sphenolithus pseudoradians*.

Muestra con abundante materia orgánica y muy alterada por óxidos de hierro.

Discoaster sp.
Helicosphaera reticulata

La presencia de *Helicosphaera compacta* y la escasa aparición de *Helicosphaera reticulata* son indicios de Eoceno superior.

[illegible]



LAMINA 1

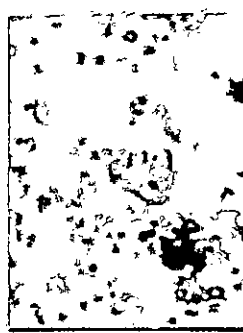
- Fotos 1 y 2 *Discoaster deflandrei* BRAMLETTE & RIEDEL (1954)
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 3 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 4 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz polarizada
Aumento : 40 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 5 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 6 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz polarizada
Aumento : 40 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 7 y 8 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 9,10 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 11,12 *Zyghrablithus bijugatus* (DEFLANDRE in DEFLANDRE & FERT, 1954)
DEFLANDRE (1959)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.



1



2



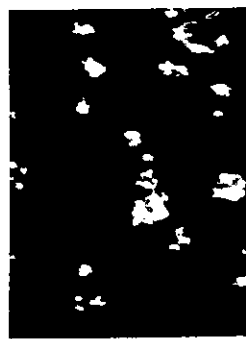
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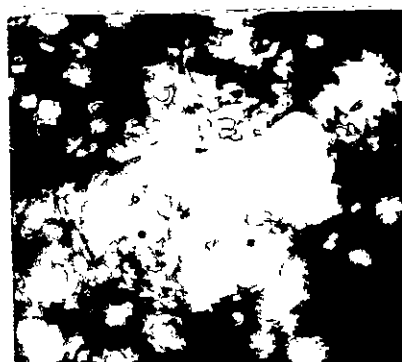
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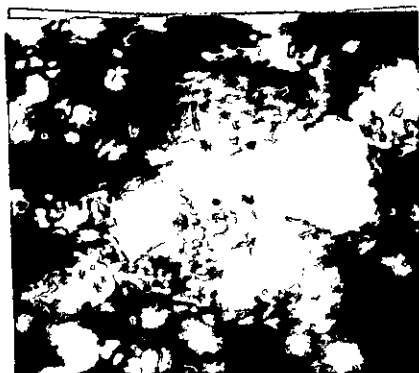
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LAMINA 2

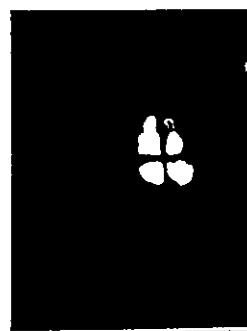
- Fotos 13,14 *Zyghrablithus bijugatus* (DEFLANDRE in DEFLANDRE & FERT, 1954)
 DEFLANDRE (1959)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Fotos 15,16,17 *Sphenolithus pseudoradians* BRAMLETTE & WILCOXON (1967)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Foto 18 *Sphenolithus pseudoradians* BRAMLETTE & WILCOXON (1967)
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Fotos 19,20,21 *Sphenolithus pseudoradians* BRAMLETTE & WILCOXON (1967)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Foto 22 *Discoaster deflandrei* BRAMLETTE & RIEDEL (1954)
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Foto 23 *Discoaster deflandrei* BRAMLETTE & RIEDEL (1954)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Fotos 24,25 *Discoaster deflandrei* BRAMLETTE & RIEDEL (1954)
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Foto 26 *Reticulofenestra* sp. HAY, MOHLER & WADE (1966)
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.
- Fotos 27,28 *Reticulofenestra* sp. HAY, MOHLER & WADE (1966)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-24
 Isla de Margarita
 Eoceno medio. Zona NP 15.



13



14



15



16



17



18



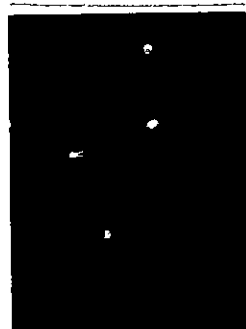
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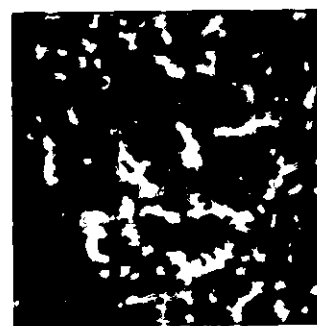
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22



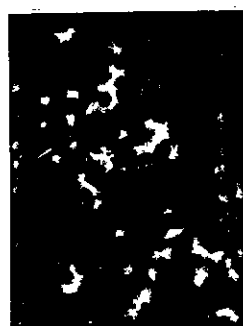
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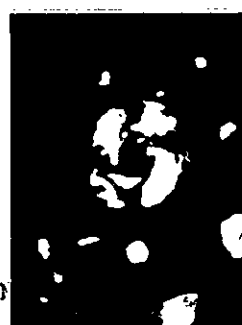
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26



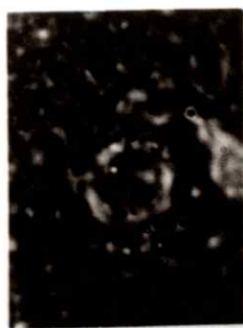
27



28

LAMINA 3

- Foto 29 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 30,31 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 32 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 33 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 34 *Ericsonia* sp. BLACK (1964)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 35,36 *Ericsonia* sp. BLACK (1964)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 37 *Helicosphaera* sp. KAMPTNER (1954)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 38,39 *Helicosphaera* sp. KAMPTNER (1954)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 40 *Cyclococcolithus* sp. KAMPTNER (1954)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 41,42 *Cyclococcolithus* sp. KAMPTNER (1954)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 43 *Cyclococcolithus* sp. KAMPTNER (1954)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 44 *Cyclococcolithus* sp. KAMPTNER (1954)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.



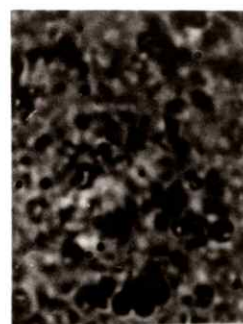
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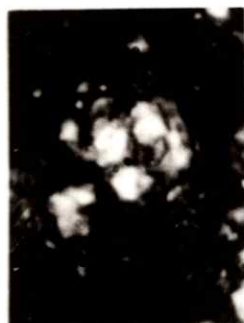
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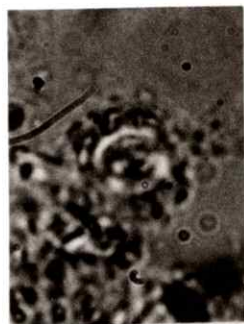
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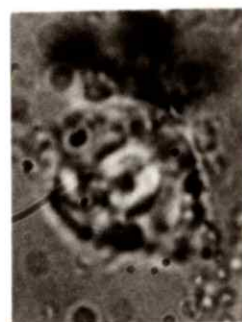
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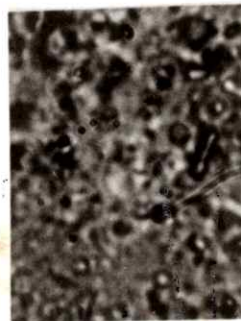
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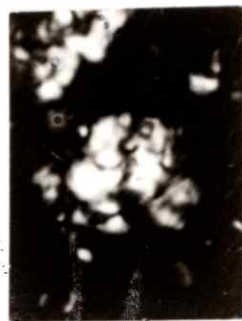
41



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LAMINA 4

- Foto 45 *Cyclococcolithus* KAMPTNER (1954)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-24
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 46 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 47 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz polarizada
Aumento : 40 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 48,49 *Helicosphaera* sp. KAMPTNER (1954)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 50 *Helicosphaera* del grupo *compacta* BRAMLETTE & WILCOXON (1967)
Luz natural
Aumento : 100 x 25,5 X 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 51,52 *Helicosphaera* del grupo *compacta* BRAMLETTE & WILCOXON (1967)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 53 *Discoaster* cf. *binodosus* MARTINI (1958)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 54,55,56 *Discoaster* sp. TAN (1937)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Fotos 57,58,59 *Sphenolithus pseudoradians* BRAMLETTE & WILCOXON (1967)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.
- Foto 60 *Discoaster* sp. TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita
Eoceno medio. Zona NP 15.



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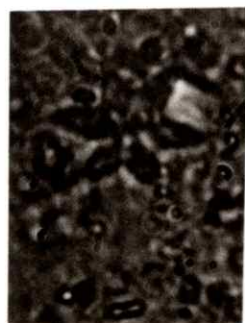
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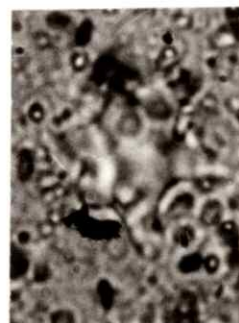
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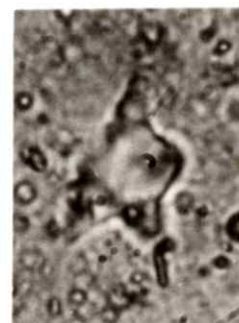
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LAMINA 5

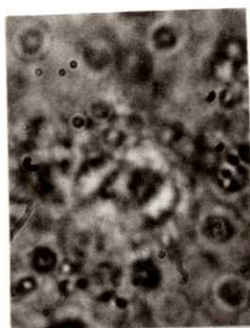
- Fotos 61,62 *Discoaster* sp. TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita, Venezuela.
Eoceno medio. Zona NP 15.
- Foto 63 *Helicosphaera* sp. KAMPTNER (1954)
Luz natural
Aumento : 100 X 25,5 x 0.8
Muestra NE-28
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 64 *Helicosphaera* sp. KAMPTNER (1954)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 65 *Reticulofenestra umbilica* (LEVIN, 1965) MARTINI & RITZKOWSKI (1968)
Contraste de fases
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Fotos 66,67 *Reticulofenestra umbilica* (LEVIN, 1965) MARTINI & RITZKOWSKI (1968)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 68 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Photos 69,70 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-28
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 71 *Discoaster barbadiensis* TAN (1927)
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 72 *Discoaster* cf. *binodosus* MARTINI (1958)
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 73 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Fotos 74,75 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 76 *Chiphragmalithus alatus* (MARTINI) MARTINI
Luz polarizada
Aumento : 40 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.



61



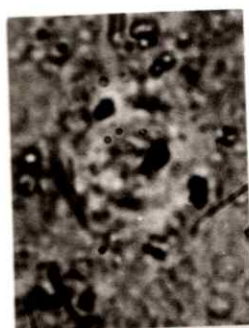
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64



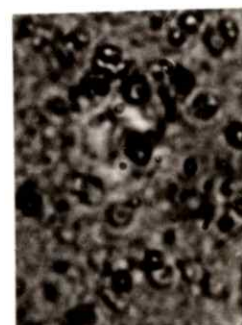
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67



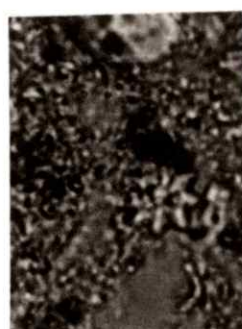
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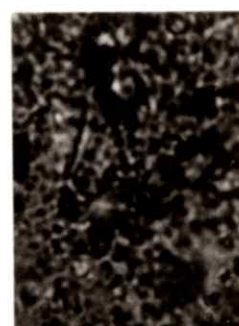
69



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2010

2010

(continuación de la lámina 6)

Foto 91

Discoaster sp. TAN (1927)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.

Foto 92

Discoaster cf. *binodosus* MARTINI (1958)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.

LAMINA 6

- Foto 77 *Discoaster* cf. *barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 78 *Reticulofenestra* sp. HAY, MOHLER & WADE (1966)
Ericsonia formosa (KAMPTNER, 1963) HAQ (1971)
Contraste de fases
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 79 *Reticulofenestra* sp. HAY, MOHLER & WADE (1966)
Ericsonia formosa (KAMPTNER, 1963) HAQ (1971)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 80 *Discoaster* cf. *tanii* BRAMLETTE & RIEDEL (1954)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 81 *Discoaster* cf. *tanii* BRAMLETTE & RIEDEL (1954)
Contraste de fases
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Fotos 82,83,84 *Micrantholithus* sp. DEFLANDRE in DEFLANDRE & FERT (1954)
Luz polarizada
Aumento : 100 x 25, 5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 85 *Discoaster barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 86 Fragmento de *Discoaster barbadiensis* TAN (1927)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 87 *Discoaster* cf. *barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 88 *Discoaster barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 89 *Discoaster* cf. *binodosus* MARTINI (1958)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.
- Foto 90 *Discoaster* cf. *barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-35
Isla de Margarita, Venezuela
Eoceno medio. Zona NP 15.



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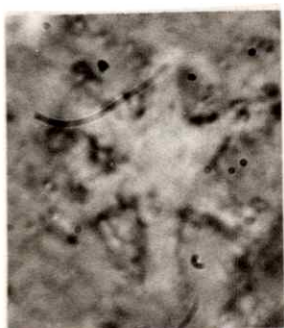
78



79



80



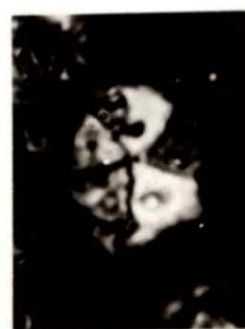
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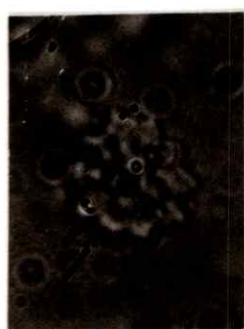
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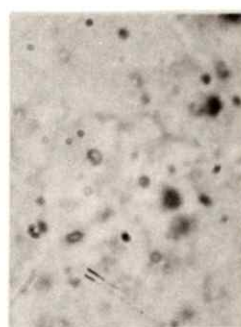
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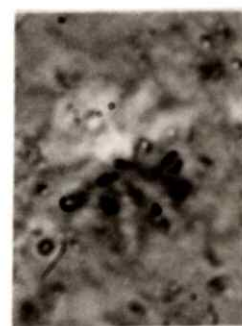
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86



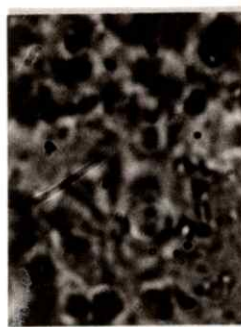
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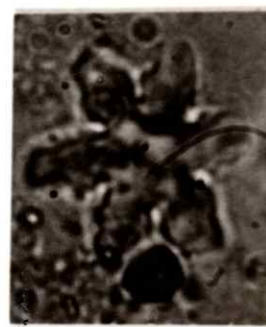
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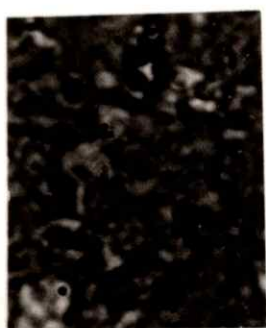
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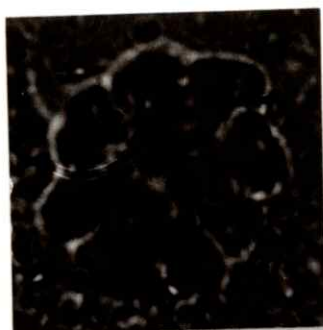
92

LAMINA 7

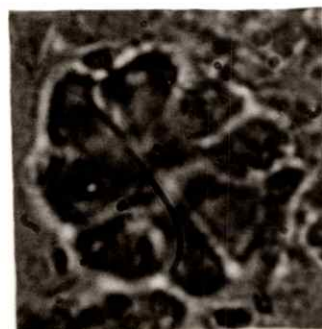
- Fotos 93,94,95
96 y 97 *Discoaster* cf. *barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-39
Eoceno medio. Zona NP 16
Isla de Margarita, Venezuela
- Foto 98 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-39
Eoceno medio. Zona NP 16
Isla de Margarita, Venezuela.
- Fotos 99,100 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-39
Eoceno medio. Zona NP 16
Isla de Margarita, Venezuela.
- Fotos 101,102 *Discoaster* cf. *barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-39
Eoceno medio. Zona NP 16
Isla de Margarita, Venezuela.
- Foto 103 *Discoaster* cf. *barbadiensis* TAN (1927)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-39
Eoceno medio. Zona NP 16
Isla de Margarita, Venezuela.
- Foto 104 *Discoaster* cf. *barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-39
Eoceno medio. Zona NP 16
Isla de Margarita, Venezuela.



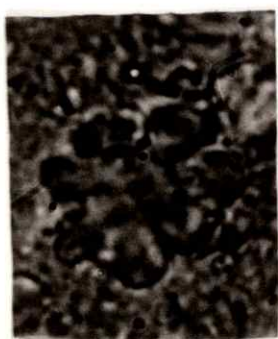
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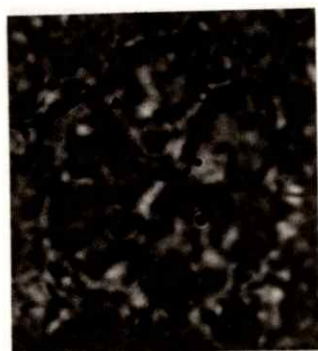
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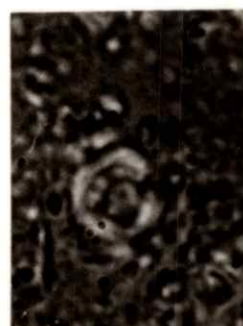
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96



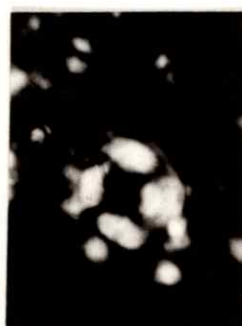
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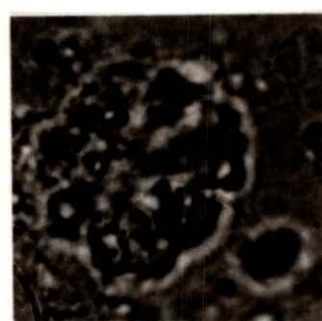
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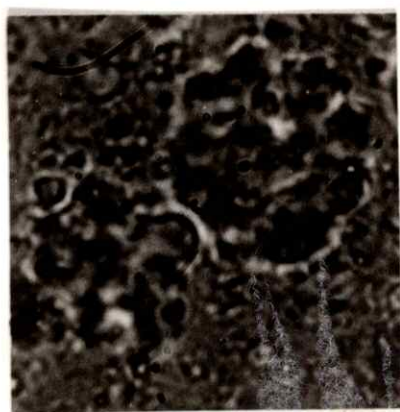
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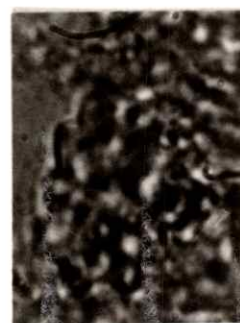
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102



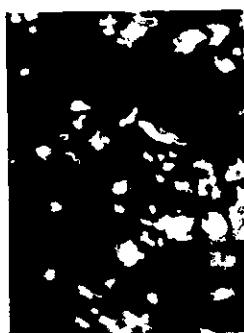
103



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LAMINA 8

- Foto 105 *Discoaster cf. barbadiensis* TAN (1927)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-39
Eoceno medio. Zona NP 16
Isla de Margarita, Venezuela
- Fotos 106,107
y 108 *Sphenolithus celsus* HAQ (1971)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-46
Eoceno medio superior a Eoceno superior.
Zonas NP 17 a NP 20
Isla de Margarita, Venezuela.
- Foto 109 *Discoaster barbadiensis* TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-46
Eoceno medio superior a Eoceno superior.
Zonas NP 17 a NP 20
Isla de Margarita, Venezuela.
- Foto 110 *Discoaster cf. binodosus* MARTINI (1958)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-46
Eoceno medio superior a Eoceno superior.
Zonas NP 17 a NP 20
Isla de Margarita, Venezuela.
- Foto 111 *Sphenolithus celsus* HAQ (1971)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-54
Eoceno medio superior a Eoceno superior.
Zonas NP 17 a NP 20
Isla de Margarita, Venezuela.
- Fotos 112,113 *Helicosphaera* del grupo *compacta* BRAMLETTE & WILCOXON (1967)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-54
Eoceno medio superior a Eoceno superior.
Zonas NP 17 a NP 20
Isla de Margarita, Venezuela.
- Fotos 114,115,
116,117,118,
y 119 *Helicosphaera* del grupo *compacta* BRAMLETTE & WILCOXON (1967)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-54
Eoceno medio superior a Eoceno superior.
Zonas NP 17 a NP 20
Isla de Margarita, Venezuela.
- Foto 120 *Helicosphaera compacta* BRAMLETTE & WILCOXON (1967)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-54
Eoceno medio superior a Eoceno superior.
Zonas NP 17 a NP 20
Isla de Margarita, Venezuela.



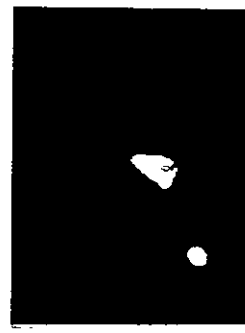
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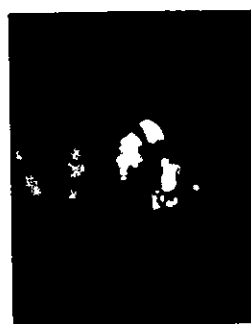
114



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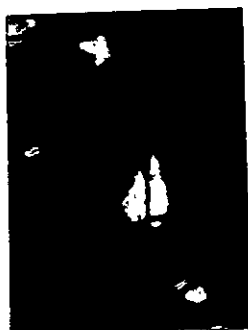
119



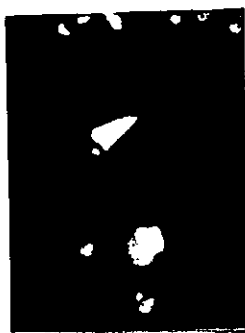
120

LAMINA 9

- Fotos 121,122 *Sphenolithus celsus* HAQ (1971)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-54
 Eoceno medio superior a Eoceno superior.
 Zonas NP 17 a NP 20
 Isla de Margarita, Venezuela.
- Foto 123 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-54
 Eoceno medio superior a Eoceno superior.
 Zonas NP 17 a NP 20
 Isla de Margarita, Venezuela.
- Foto 124 *Ericsonia formosa* (KAMPTNER, 1963) HAQ (1971)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-54
 Eoceno medio superior a Eoceno superior.
 Zonas NP 17 a NP 20
 Isla de Margarita, Venezuela.
- Fotos 125,126 y 127 *Cyclicargolithus* sp. BUKRY (1971a)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-61
 Eoceno superior. Zonas NP 18 a NP 20
 Isla de Margarita, Venezuela.
- Foto 128 *Discoaster subbarbadiensis* ?
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-61
 Eoceno superior. Zonas NP 18 a NP 20
 Isla de Margarita, Venezuela.
- Foto 129 *Discoaster subbarbadiensis* ?
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-61
 Eoceno superior. Zonas NP 18 a NP 20
 Isla de Margarita, Venezuela.
- Fotos 130,131 *Discoaster barbadiensis* TAN (1927)
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-61
 Eoceno superior. Zonas NP 18 a NP 20
 Isla de Margarita, Venezuela.
- Foto 132 *Discoaster barbadiensis* TAN (1927)
 Luz polarizada
 Aumento : 100 x 25,5 X 0.8
 Muestra NE-61
 Eoceno superior. Zonas NP 18 a NP 20
 Isla de Margarita, Venezuela.
- Foto 133 *Reticulofenestra* sp. HAY, MOHLER & WADE (1966)
 Luz natural
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-61
 Eoceno superior. Zonas NP 18 a NP 20
 Isla de Margarita, Venezuela.
- Fotos 134,135 y 136 *Reticulofenestra* sp. HAY, MOHLER & WADE (1966)
 Luz polarizada
 Aumento : 100 x 25,5 x 0.8
 Muestra NE-61
 Eoceno superior. Zonas NP 18 a NP 20
 Isla de Margarita, Venezuela.



121



122



123



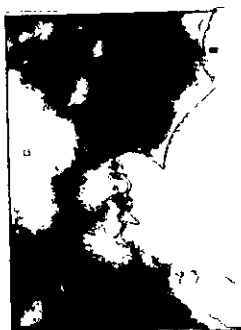
124



125



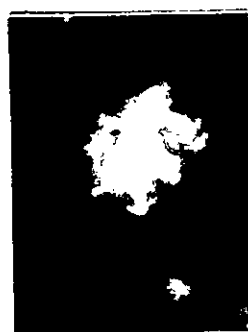
126



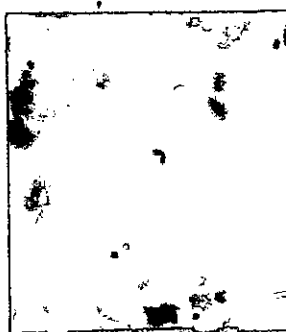
127



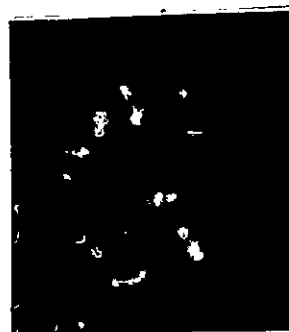
128



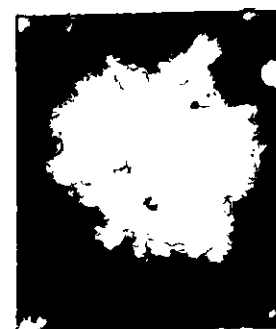
129



130



131



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133



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136

LAMINA 10

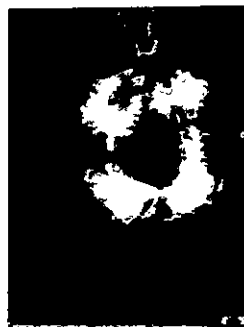
- Foto 137** *Discoaster* sp. TAN (1927)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Foto 138** *Reticulofenestra umbilica* (LEVIN, 1965) MARTINI & RITZKOWSKI (1968)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Fotos 139,140 y 141** *Reticulofenestra umbilica* (LEVIN, 1965) MARTINI & RITZKOWSKI (1968)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Foto 142** *Helicosphaera reticulata* BRAMLETTE & WILCOXON (1967)
Muy recristalizada
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Fotos 143,144 y 145** *Helicosphaera reticulata* BRAMLETTE & WILCOXON (1967)
Muy recristalizada
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Fotos 146,147 y 148** *Helicosphaera compacta* BRAMLETTE & WILCOXON (1967)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Foto 149** *Discoaster sublodoensis* BRAMLETTE & SULLIVAN (1961)
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Foto 150** *Discoaster sublodoensis* BRAMLETTE & SULLIVAN (1961)
Luz polarizada
Aumento : 40 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Foto 151** *Discoaster sublodoensis* BRAMLETTE & SULLIVAN (1961)
Luz natural
Aumento : 40 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.



137



138



139



140



141



142



143



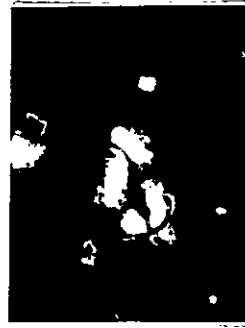
144



145



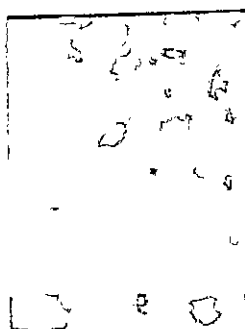
146



147



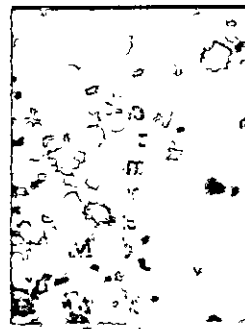
148



149



150

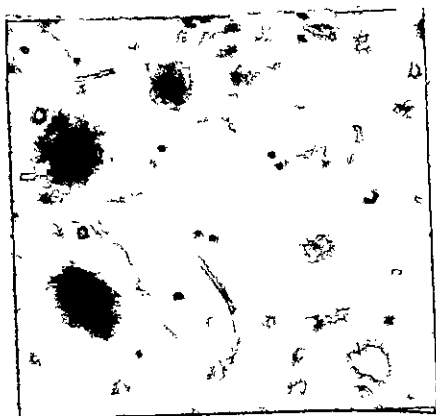


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Photo 10

LAMINA 11

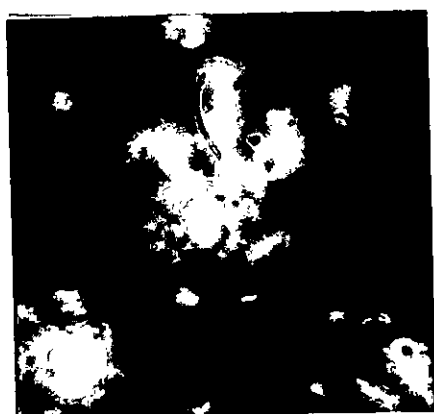
- Fotos 152, 153 *Discoaster sublodoensis* BRAMLETTE & SULLIVAN (1961)
Luz natural
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Foto 154 *Discoaster sublodoensis* BRAMLETTE & SULLIVAN (1961)
Luz polarizada
Aumento : 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.
- Foto 155 *Discoaster sublodoensis* BRAMLETTE & SULLIVAN (1961)
Luz natural
Aumento 100 x 25,5 x 0.8
Muestra NE-61
Eoceno superior. Zonas NP 18 a NP 20
Isla de Margarita, Venezuela.



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