31E012

STRATIGRAPHIC RANGE	Upper Cretaceous (Cenomanian-?Maast.)	SHIPMENT NUMBER	EEG-78-69
GENERAL LOCALITY	Georgia	REGION	Camden Co.
QUADRANGLE OR AREA	Jacksonville 2 deg. sheet	DATE RECEIVED	8/1/78
KINDS OF FOSSILS	Calcareous Nannofossils	STATUS OF WORK	Complete
REFERRED BY	Greg Gohn	DATE REPORTED	11/22/78
REPORT PREPARED BY	Charles C. Smith		

Eighteen very small samples of drill cuttings were submitted for planktonic foraminifera and calcareous nannofossil investigations. These samples were taken from the Pan American Union Camp No. B-1, Georgia Geological Survey Well No. 1198, located on the Jacksonville 2 degree sheet about 9 miles east of Talhatan, Camden County, Georgia.

The samples were received on 8/1/78, and a report on the planktonic foraminiferal faunas completed on 9/27/78 (see E&R EEG-78-69). Prior to laboratory processing for extraction of the foraminifera, each sample was examined under a binocular microscope and two or three small cuttings hand picked for nannofossil preparation. Although I may have biased the results by selectively picking the cuttings, the original small size of the samples and their varied lithologies prevented a bulk or composite analysis. Otherwise, all selected cuttings were processed by standard laboratory processing techniques.

The uppermost four samples from this well consist of gray, tan and brown massive to crystal ine dolomite barren of calcareous nannofossils. Samples from this barren zone are as follows:

2700-2730 feet	2850-2880 feet
2790-2820 feet	3020-3050 feet

Remaining samples have been biostratigraphically dated as follows:

3080-3110	Maastrichtian or late Campanian
3240-3300	late Campanian
3390-3730	Campanian
3790-4210	early Santonian
4280-4310	Coniacian
4530-4560	late Cenomanian

Ray Christopher has issued a report (EEG-78-69 dated 9/8/78) on the pollen from four samples taken from the lower portion of this well. From that study, Ray concluded that the interval from 4090-4620 feet @

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

were *...somewhere between the late Cenomanian and late Turonian...*. As noted herein and in my previous report on the planktonic foraminifera from this well, I must disagree with my learned colleague. As these samples are cuttings and have a questionable history since being collected, I do not think it advantageous to pursue this disagreement further. However, if you do not follow my biostratigraphic interpretations, you will be making a big mistake (that is O.K. Ray-- we will still be pals!).

A detailed listing of nannofossil species present and their relative abundance in each sample is included in chart form as an attachment to this report.

Sample 2700-2730 feet.
Age: Uncertain.
Comments: As is the case with the foraminifera, the uppermost few samples from this well consist of crystalline dolomite and are barren of calcareous nannofossils.

Sample 2790-2820 feet.
Age and comments as above.

Sample 2850-2880 feet.
Age and comments as above.

Sample 3020-3050 feet.
Age: Uncertain.
Comments: This sample contains a single rhabdolith stem fragment. Although the fragment appears to be a piece of an EIFFELLITHUS TURRISEIFFELI stem, and thus of Cretaceous age, I can not be certain.

Sample 3080-3110 feet.
Age: Late Campanian or Maastrichtian.
Comments: This sample contains very rare and extensively recrystallized calcareous nannofossils. The three species identified from this sparse flora, although long-ranging forms, are of unquestionable Upper Cretaceous age. The late Campanian or Maastrichtian age assignment is derived essentially from the underlying sample. @

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 3240-3270 feet.
Age: Late Campanian.
Comments: This sample is very dolomitic, and the generally rare nannofossil flora is extensively overgrown and very poorly preserved. The presence of TETRALITHUS ACULEUS, which occurs in strata of late Campanian through Maastrichtian age, and EIFFELLITHUS EXIMIUS, which is not known to occur in strata younger than Campanian age, indicates the sample to be of late Campanian age. The occurrence of LITHRAPHIDITES QUADRATUS suggests the presence of some down-hole contamination, as this species occurs only in strata of middle and late Maastrichtian age.

Sample 3300-3330 feet.
Age: Late Campanian.
Comments: As with the overlying sample, this interval is very dolomitic and the nannofossils rare and poorly preserved. The continued very rare occurrence of LITHRAPHIDITES QUADRATUS is bothersome as it is surely reworked from overlying beds. However, barring massive down-hole contamination (which I do not see), the presence of TETRALITHUS ACULEUS and associated flora indicates the interval to be no older than late Campanian in age.

Sample 3390-3420 feet.
Age: Campanian.
Comments: The nannoflora from this sample is very poorly preserved, with only a few percent of the forms being identifiable. The Campanian age assigned to this sample is based essentially on the age of the overlying and underlying beds.

Sample 3480-3510 feet.
Age: Campanian.
Comments: As in the overlying beds, this interval is very dolomitic and the nannofossils extensively recrystallized. Although the flora could be completely reworked, I see nothing indicative of a pre-Campanian age. @

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 3580-3610 feet.
Age: Campanian.
Comments: The rare and non-diagnostic species present in this sample range from latest Turonian through Maastrichtian strata. The Campanian assignment is derived solely from the age of underlying strata.

Sample 3700-3730 feet.
Age: Campanian.
Comments: The presence of BROINSONIA PARCA indicates this sample can be no older than very earliest Campanian age. The possibility that this species could be a down-hole contaminant, or the entire assemblage reworked, is discounted due to (a), the absence of stratigraphically older nannofossil species, and (b) the presence of diagnostic Campanian planktonic foraminifera (see EEG-78-69 dated 9/27/78).

Sample 3790-3820 feet.
Age: Early Santonian.
Comments: This interval represents the highest level to contain a reasonably diverse flora, although recrystallization remains apparent. TETRALITHUS OBSCURUS has its lowest occurrence level (initial appearance) in strata of earliest Santonian age, and its presence in this sample is indicative of a Santonian or post-Santonian age. However, its co-occurrence with LITHASTRINUS FLORALIS, which ranges from the late Aptian through middle Santonian, confirms an early or middle Santonian age assignment for the nannofossil flora. The absence of BROINSONIA PARCA, characteristic of Campanian and Maastrichtian floras, is further evidence of pre-Campanian strata. The early Santonian age assignment of this sample is derived from both the nannofossils as well as its rare planktonic foraminiferal fauna.

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 3880-3910 feet.
Age: Early Santonian.
Comments: This flora is near identical to that of the overlying sample, and contains both TETRALITHUS OBSCURUS and LITHASTRINUS FLORALIS as well as an associated early Santonian assemblage. noticeably absent are LITHASTRINUS GRILLII and MARTHASTERITES FURCATUS, both normally present in coastal plain shelf floras of Coniacian through middle Santonian age.

Sample 4000-4030 feet.
Age and comments as above.

Sample 4090-4120 feet.
Age: Early Santonian.
Comments: As in the overlying few samples, this interval contains an abundant, well preserved, and diagnostic early Santonian nannofossil flora. I can not agree with Ray Christophers conclusion that this interval is either late Cenomanian or Turonian in age (see my report on the planktonic foraminifera, EEG-78-69 dated 9/27/78, page 4). As I noted in that report, although Ray and I worked the same sample I am unable to explain our obvious discrepancy in biostratigraphic assignment.

Sample 4180-4210 feet.
Age: Early Santonian.
Comments: Same general comments as above. Both the diverse planktonic foraminiferal faunas and rich nannofossil floras indicate this sample to be of early Santonian age. Important *first* occurrences include the presence of both MARTHASTERITES FURCATUS and M. SIMPLEX.

Sample 4280-4310 feet.
Age: Coniacian.
Comments: The nannoplankton flora recovered from this sample is indicative of strata of early Santonian age, although the planktonic foraminifera are characteristic of a Coniacian age. Since many of the nannofossils range throughout the Coniacian and early Santonian, and since this sample (as well as others from this well) contains obvious reworked species (for example, LITHRAPHIDITES QUADRATUS from the middle and late @

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 4280-4310 continued:
Maastrichtian), I suggest that we stick with the planktonic forams and assign this sample to strata of Coniacian age. As with my previous comments, there is no evidence what-ever to consider a pre-Coniacian age for this and the overlying samples.

Sample 4530-4560 feet.
Age: Late Cenomanian.
Comments: Although this sample contains many obviously reworked species (AHMUELLERELLA OCTORADIATA, EIFFELLITHUS EXIMIUS, LITHASTRINUS GRILLII, MICRORHABDULUS DECORATUS, MICULA STAUROPHORA, and TETRALITHUS OBSCURUS, plus several others), the presence of COROLLITHION ACHYLOSUM, LITHASTRINUS ALATUS, PARHABDOLITHUS ASPER, and PODORHABDUS ALBIANUS indicate these beds to be of Cenomanian age. The distinctive planktonic foraminifera recovered from this sample further confirms it to be of late Cenomanian age.

Processed foram samples and nannofossil slides are being retained in this laboratory.

Range and abundance chart follows in Part 2. @

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE	Upper Cretaceous (Cenomanian-?Maast.)	SHIPMENT NUMBER	EEG-78-69A
GENERAL LOCALITY	Georgia	REGION	Camden Co.
QUADRANGLE OR AREA	Jacksonville 2 deg. sheet	DATE RECEIVED	8/1/78
KINDS OF FOSSILS	Calcareous Nannofossils	STATUS OF WORK	Complete
REFERRED BY	Greg Sohn	DATE REPORTED	11/22/78
REPORT PREPARED BY	Charles C. Smith		

CONTINUED FROM EEG-78-69.

RANGE AND ABUNDANCE OF CALCAREOUS NANNOFOSSILS
PAN-AMERICAN UNION CAMP NO. B-1
CAMDEN COUNTY, GEORGIA

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AHMUELLERELLA OCTORADIATA					VR			R	VR	VR		C	R	C
BIDISCUS sp. indet.										VR				
BISCUTUM BLACKII								VR	R	C				
B. CONSTANS													C	C
BRAARUDOSPHAERA BIGELOWI		VR		VR	VR		VR	R	C	C	C	C	C	C
BROINSONIA ENORMIS		VR		VR	VR			R	R	R			R	
B. PARCA		R			VR		VR							
CHIASTOZYGUS CUNEATUS									R	R	R	A	C	
C. PLICATUS		VR				VR	VR	R	C	C	R	C	C	
COROLLITHION ACHYLOSUM														C
C. EXIGUUM											VR			
C. SIGNUM										R	VR	R	C	C
CRETARHABDUS CONICUS		R	R	VR		VR	R	R	R	R			R	C
C. CRENULATUS		VR			R		VR	C	R	R		R	R	C
CRIBROSPHAERELLA EHRENBERGII			VR	R	R		R	C	R	C		C	R	C
CYLINDRALITHUS sp. indet.				VR			VR			VR		VR		
EIFFELLITHUS EXIMIUS		VR			VR		C	A	C	C	A	C	C	R
E. TRABECULATUS							VR		C	A	C	C	A	
E. TURRISEIFFELI	VR	C				VR	R	C	C	R	C	A	A	A
GARTNERAGO OBLIQUUM							VR	C	R	C	C	R	C	VR
G. STRIATUM											VR			
KAMPTNERIUS sp. indet.								VR						
LITHRAPHIDITES CARNIOLENSIS		R		R	R			C	R	R	C	R	C	
L. QUADRATUS		VR	VR	VR									VR	
LITHASTRINUS ALATUS														VR
L. FLORALIS								VR	R		R	R	R	C
L. GRILLII													A	VR
LUCIANORHABDUS CAYEUXII							C	A	C	A	A	A	C	
MANIVITELLA PEMMATOIDEA					VR			VR	VR	VR	VR	R	R	VR
MARTHASTERITES FURCATUS												VR	R	
M. SIMPLEX												VR		

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69A

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
MICRORHABDULUS BELGICUS		VR	VR								R		VR	
M. DECORATUS	VR	R		R		R		C					R	R
M. ELONGATUS		VR	R	VR		VR	R	R	R		R			
M. STRADNERI				VR		VR	VR	R		VR				
MICULA STAUROPHORA			VR			VR	VR		A	A	C	R	C	R
PARHABDOLITHUS ANGUSTUS								VR	VR		R		R	C
P. ASPER														C
P. EMBERGERI					VR				VR	VR			VR	VR
PODORHABDUS ALBIANUS														R
PREDISCOSPHAERA CRETACEA		R	R		R	VR		C	R	R	C	C	A	A
P. SPINOSA													R	
SCAPHOLITHUS FOSSILIS													VR	C
STEPHANOLITHION LAFFITTEI										VR		R	R	VR
TETRALITHUS sp. cf. T. ACULEUS		VR	VR											
T. OBSCURUS		VR					C	A	C	VA	A	R	A	R
T. PYRAMIDUS				VR			VR							
VAGALAPILLA MATALOSA							VR	VR		VR		R	C	C
VEKSHINELLA DIBRACHIATA										R		VR	VR	
V. sp. cf. V. ELLIPTICA														VR
V. sp. indet.								VR	VR	VR				
WATZNAUERIA BARNESAE		C	C	R	C	R	A	VA	VA	VA	VA	VA	VA	VA
W. BIPERFORATA											VR			
W. sp. cf. W. OVATA														VR
ZYGODISCUS DIPLOGRAMMUS		R			R		R		A	A	A	C	C	A
Z. ORIONATUS		VR	VR	R	C		R	C	C	C		C	A	A
Z. SPIRALIS	VR	R			R	R		C	C	R		C	C	R
Z. THETA								VR	VR			VR		

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FORM 9-1861 (OCT 1972)

U.S. GEOLOGICAL SURVEY

REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69A

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

ABUNDANCE CODE

VR	=	1-2 specimens
R	=	3-5 specimens
C	=	6-10 specimens
A	=	11-50 specimens
VA	=	greater than 50 specimens

CODE TO SAMPLE DEPTH (FEET)

1	=	3080-3110	8	=	3790-3820
2	=	3240-3270	9	=	3880-3910
3	=	3300-3330	10	=	4000-4030
4	=	3390-3420	11	=	4090-4120
5	=	3480-3510	12	=	4180-4210
6	=	3580-3610	13	=	4280-4310
7	=	3700-3730	14	=	4530-4560

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U.S. GEOLOGICAL SURVEY

REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE	U. Cretaceous (Cenomanian- ?Maast.)	SHIPMENT NUMBER	EEG-78-69
GENERAL LOCALITY	Georgia	REGION	Camden Co.
QUADRANGLE OR AREA	Jacksonville 2 deg. sheet	DATE RECEIVED	8/1/78
KINDS OF FOSSILS	Planktonic Foraminifera	STATUS OF WORK	Incomplete
REFERRED BY	Greg Gohn	DATE REPORTED	9/27/78
REPORT PREPARED BY	Charles C. Smith		

Eighteen very small samples of drill cuttings were submitted for planktonic foraminiferal and calcareous nannofossil investigation. Samples are from the Pan American-Union Camp No. B-1, Georgia Geological Survey Well No. 1198, located on the Jacksonville 2 degree sheet about nine miles east of Talhatan, Camden County, Georgia.

All samples were processed by standard laboratory techniques. Although the samples were quite small, in most instances the foraminiferal fauna is sufficiently diverse to establish excellent biostratigraphic correlations. The majority of nannofossil slides have been examined, and a report on these floras will be issued shortly.

Sample 2700-2730 feet
Age: Uncertain
Comments- Washed residues consist of tan to light brown crystalline dolomite completely barren of all calcareous microfossils.

Sample 2790-2820 feet
Age and Comments as above.

Sample 2850-2880 feet
Age and Comments as above.

Sample 3020-3050 feet
Age and Comments as above.

Sample 3080-3110 feet
Age: Upper Cretaceous, late Campanian or Maastrichtian.
Comments: This sample consists of very porous, white to pale gray, recrystallized quartzose silty calcarenite. The sample is barren of planktonic foraminifera but contains rare very badly recrystallized benthonic forams, and a rare nannofossil flora (report to be issued shortly). Of importance is the fact that at this depth we are at, or more likely below the Cretaceous-Tertiary contact. @

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REPORT ON REFERRED FOSSILS

STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 3240-3270 feet
Age: Late Campanian or Maastrichtian.
Comments: This sample consists of pale gray calcisiltite as above. No planktonics were observed, although rare benthonic forams are present. Its age is derived from the nannofossils.

Sample 3300- 3330 feet
Age: No older than late Campanian.
Comments: The sample lithology is as above, although no foraminifera were observed. Rare nannofossils are indicative of the above age assignment.

Sample 3390-3420 feet
Age: No older than late Campanian.
Comments: As above.

Sample 3480-3510 feet
Age: Campanian.
Comments: Sample consists of dolomitic, quartzose silty calcisiltite containing only rare and poorly preserved benthonic forams, and a sparse, recrystallized nannofossil flora.

Sample 3580-3610 feet
Age: (?) Campanian
Comments: This sample contains no planktonic foraminifera and a very poorly preserved, non-diagnostic nannoplankton flora. Its age is derived largely from the underlying sample.

Sample 3700-3730 feet
Age: (?) Campanian
Comments: A single planktonic foraminifera, GLOBOTRUNCANA STUARTIFORMIS Dalbiez, was observed in this sample. If this species is not reworked via down hole contamination, it alone provides sufficient evidence for strata no younger than Campanian age. Nannofossils tend to support this conclusion.

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 3790-3820 feet

Age: Early Santonian

Fauna: VR - MARGINOTRUNCANA ANGUSTICARENATA (Gandolfi)
R - M. DIFFORMIS (Gandolfi)
R - HETEROHELIX REUSSI (Cushman)

Comments: Species assignable to the genus MARGINOTRUNCANA are not known in strata younger than early Santonian age. Although there is still some internal debate within the P&S Branch regarding the Santonian-Campanian boundary (This debate obviously having some bearing on the foram zonation of early and late Santonian strata) the sample can be no younger nor older than Santonian age.

Sample 3880-3910 feet

Age: Early Santonian

Comments: This sample contains very rare, recrystallized and poorly preserved species assignable to the genus MARGINOTRUNCANA. Preservation is so poor that I am unwilling to assign specific epithat to these forms.

Sample 4000-4030 feet

Age: M. CONCAVATA Subzone, G. BULLOIDES Assemblage Zone, early Santonian.

Fauna: A - HETEROHELIX REUSSI (Cushman)
R - PSEUDOTEXTULARIA PLUMMERAE (Loetterle)
R - GLOBIGERINELLOIDES sp. indet.
R - HEDBERGELLA BRITTONENSIS Loeblich and Tappan
R - WHITEINELLA sp. cf. W. ARCHAEOCRETACEA Pessagno
C - MARGINOTRUNCANA ANGUSTICARENATA (Gandolfi)
C - M. CANALICULATA (Reuss)
R - M. CONCAVATA (Brotzen)
A - M. DIFFORMIS (Gandolfi)
C - M. INDICA (Jacob and Sastry)
C - M. PSEUDOLINNEIANA Pessagno
C - M. RENZI (Gandolfi)
A - ARCHAEOGLOBIGERINA BLOWI Pessagno
A - A. BOSQUENSIS Pessagno
R - GLOBOTRUNCANA LINNEIANA (d Orbigny)

Comments: This sample contains a rich, diverse, and very well preserved planktonic fauna assignable to the M. CONCAVATA Subzone. @

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REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 4090-4120 feet

Age: M. CONCAVATA Subzone, G. BULLOIDES Assemblage Zone, early Santonian.

Fauna:
C - HETEROHELIX REUSSI (Cushman)
R - HEDBERGELLA BRITTONENSIS Loeblich and Tappan
R - WHITEINELLA ARCHAEOCRETACEA Pessagno
VA - MARGINOTRUNCANA ANGUSTICARENATA (Gandolfi)
C - M. CANALICULATA (Reuss)
R - M. CONCAVATA (Brotzen)
C - M. CORONATA (Bolli)
A - M. DIFFORMIS (Gandolfi)
VR - M. sp. cf. M. IMBRICATA (Mornod)
C - M. INDICA (Jacob and Sastry)
C - M. MARGINATA (Reuss)
C - M. PSEUDOLINNEIANA Pessagno trans. to G. LINNEIANA (d Orbigny)
VR - M. RENZI (Gandolfi)
R - M. WILSONI (Bolli)
R - ARCHAEOGLOBIGERINA BLOWI Pessagno
C - A. BOSQUENSIS Pessagno
VA - A. CRETACEA (d Orbigny)
R - GLOBOTRUNCANA LINNEIANA (d Orbigny)

Comments: The small residues from this sample consist almost entirely of planktonic foraminifera. The presence of M. CONCAVATA and several species assignable to ARCHAEOGLOBIGERINA and WHITEINELLA indicate this sample is assignable to the M. CONCAVATA Subzone of early Santonian age.

Ray Christopher reported (EEG-78-69 dated 9/8/78) that this sample was assignable to either his zone IV (late Cenomanian) or post zone IV pre zone V (Turonian). I see absolutely nothing to support such an assignment. The planktonic foraminifera are quite characteristic of Santonian strata, and the calcareous nannofossil floras support an early to middle Santonian age for this sample. Although these are cuttings samples with a questionable history, Ray and I have worked the same sample and I can not explain the obvious age discrepancy between the palynomorphs and calcareous micro-and nannofossils.

a

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REPORT ON REFERRED FOSSILS

XX 5 XX

STRATIGRAPHIC RANGE

GENERAL LOCALITY

QUADRANGLE OR AREA

KINDS OF FOSSILS

REFERRED BY

REPORT PREPARED BY

SHIPMENT NUMBER EEG-78-69

REGION

DATE RECEIVED

STATUS OF WORK

DATE REPORTED

Sample 4180-4210 feet

Age: M. CONCAVATA Subzone, G. BULLOIDES Assemblage Zone, early Santonian.

Comments: Although this sample was not studied in detail, its foraminiferal fauna is near identical to that of the overlying sample at 4090-4120 feet. The presence of M. CONCAVATA (Brotzen) and associated fauna indicates this sample is still of early Santonian age.

Sample 4280-4310 feet

Age: Coniacian.

Fauna:
C - HETEROHELIX MOREMANI (Cushman)
C - HEDBERGELLA BRITTONENSIS Loeblich and Tappan
R - H. DELRIOENSIS (Carsey)
R - H. PLANISPIRA (Tappan)
C - WHITEINELLA ARCHAEOCRETACEA Pessagno
VR - ? WHITEINELLA INORNATA (Bolli)
C - MARGINOTRUNCANA CORONATA (Bolli) trans. to M. PSEUDOLINNEIANA Pessagno
C - M. DIFFORMIS (Gandolfi) trans. to M. ANGUSTICARENATA (Gandolfi)
VR - M. INDICA (Jacob and Sastry)
R - M. RENZI (Gandolfi)
R - M. WILSONI (Bolli)

Comments: This fauna lacks M. CONCAVATA and species assignable to the genus ARCHAEOGLOBIGERINA, all characteristic of early Santonian faunas. Furthermore, it lacks MARGINOTRUNCANA HELVETICA (Bolli) and M. SIGALI (Reichel), both diagnostic of Turonian strata. It is thus assignable to strata of Coniacian age (equivalent to the basal few feet of the Austin Chalk of Texas.

Sample 4530-4560 feet

Age: Late Cenomanian (with massive reworking)

Fauna:
A - GUEMBELITRIA HARRISI Tappan
A - HETEROHELIX MOREMANI (Cushman)
R - GLOBIGERINELLOIDES sp. cf. G. ASPERUS (Ehrenberg)
C - HEDBERGELLA BRITTONENSIS Loeblich and Tappan
C - H. DELRIOENSIS (Carsey)
A - WHITEINELLA ARCHAEOCRETACEA Pessagno @

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REPORT ON REFERRED FOSSILS

XX 6 XX

STRATIGRAPHIC RANGE

GENERAL LOCALITY

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C - W. INORNATA (Bolli)
R - MARGINOTRUNCANA ANGUSTICARENATA (Gandolfi)
R - M. DIFFORMIS (Gandolfi)
R - M. DIFFORMIS (Gandolfi) trans. to WHITEINELLA n. sp.
R - M. WILSONI (Bolli)

Comments: The presence of GUEMBELITRIA HARRISI in this sample indicates it is at least as old as the late Cenomanian. None of the species of WHITEINELLA nor MARGINOTRUNCANA range into late Cenomanian strata, and their presence in this sample is attributed to down hole contamination of cuttings from overlying Coniacian and early Santonian strata. I obviously place great emphasis on G. HARRISI as being one of the characteristic species indicative of late Cenomanian age strata. It is comforting to note, however, that the calcareous nannofossils from this same sample confirm a late Cenomanian age assignment.

Key to Abundance Code:

VR = 1-2 individuals
R = 3-5 individuals
C = 6-10 individuals
A = 11-50 individuals
VA = greater than 50 individuals @

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