

UNIVERSITY OF RHODE ISLAND

Graduate School of Oceanography

Kingston, R. I. 02881

CRUISE REPORT

R/V TRIDENT CRUISE TR-126

SCHEDULE:

Departed	Miami	7 November 1972, 2100
Arrived	Vera Cruz	21 November 1972, 1700

REGION INVESTIGATED:

Intensive piston coring was carried out in the southwest Gulf of Mexico region in the Campeche Bay area south of Tampico (Figure 1).

DURATION OF CRUISE:

Fifteen days

SCIENTIFIC PARTY:

Dr. J. P. Kennett, Chief Scientist, URI
 Dr. A. S. Hunt, Co-Investigator, University of Vermont
 Mr. P. Turner, Geology Student, University of Vermont
 Mr. T. Aspinwall, Biology Student, URI
 Ms. C. Brunner, Graduate Student, URI
 Mr. B. Corliss, Graduate Student, URI (Coring Crew Deck Leader)
 Mr. A. Goldstein, Graduate Student, URI
 Mr. E. Scholfield, Assistant
 Ms. V. Tippey, Graduate Student, URI
 Mr. D. Williams, Graduate Student, URI (Coring Crew Deck Leader)
 Mr. A. Buddington, Marine Technician, URI
 Mr. E. Houde, Marine Technician, URI

PURPOSE:

The objective of cruise TR-126 was to obtain a large number of piston cores of good length from the various geomorphological provinces within the southwest Gulf of Mexico. Previous studies on cores collected during Kane operations had identified six provinces of distinctly different sedimentation rates within the Late Pleistocene. These are as follows ranked in order of decreasing sedimentation rate: Sigsbee Deep; Campeche Tongue; Mexican Continental Slope; Tampico-Campeche Knolls; Vera Cruz Tongue and Mexican Ridges. The objectives of core studies in each province are slightly different because of these sedimentation rate differences.

Major objectives of study are as follows:

- a) To define in detail Late Pleistocene paleoclimatic changes within the Gulf.
- b) To establish spatial and temporal relations of volcanic ash layers within the sequence and to establish detailed relations with paleoclimatic trends. Two sources of ash are assumed within the area and traverses of cores have been obtained from both.
- c) To establish detailed relations amongst planktonic foraminifera.
- d) To date the sequence by C_{14} and Th_{230} methods.
- e) To establish paleomagnetic detailed paleomagnetic trends in cores of high sedimentation rates.
- f) To establish changes in the lysocline.
- g) To collect material for O_{16}/O_{18} studies.

RESULTS:

A total of 43 piston cores of good length (up to 35 feet) were obtained from all provinces (Figure 1; Table 1) and all desired locations. Each piston core has a trigger core for core top (Recent) studies. It is anticipated that the material obtained will enable all planned studies to be carried out successfully. The only material lost of significance was a trigger core unit. Much was learned by all towards the perfection of the piston-coring process off the RV Trident, even in moderately rough seas.

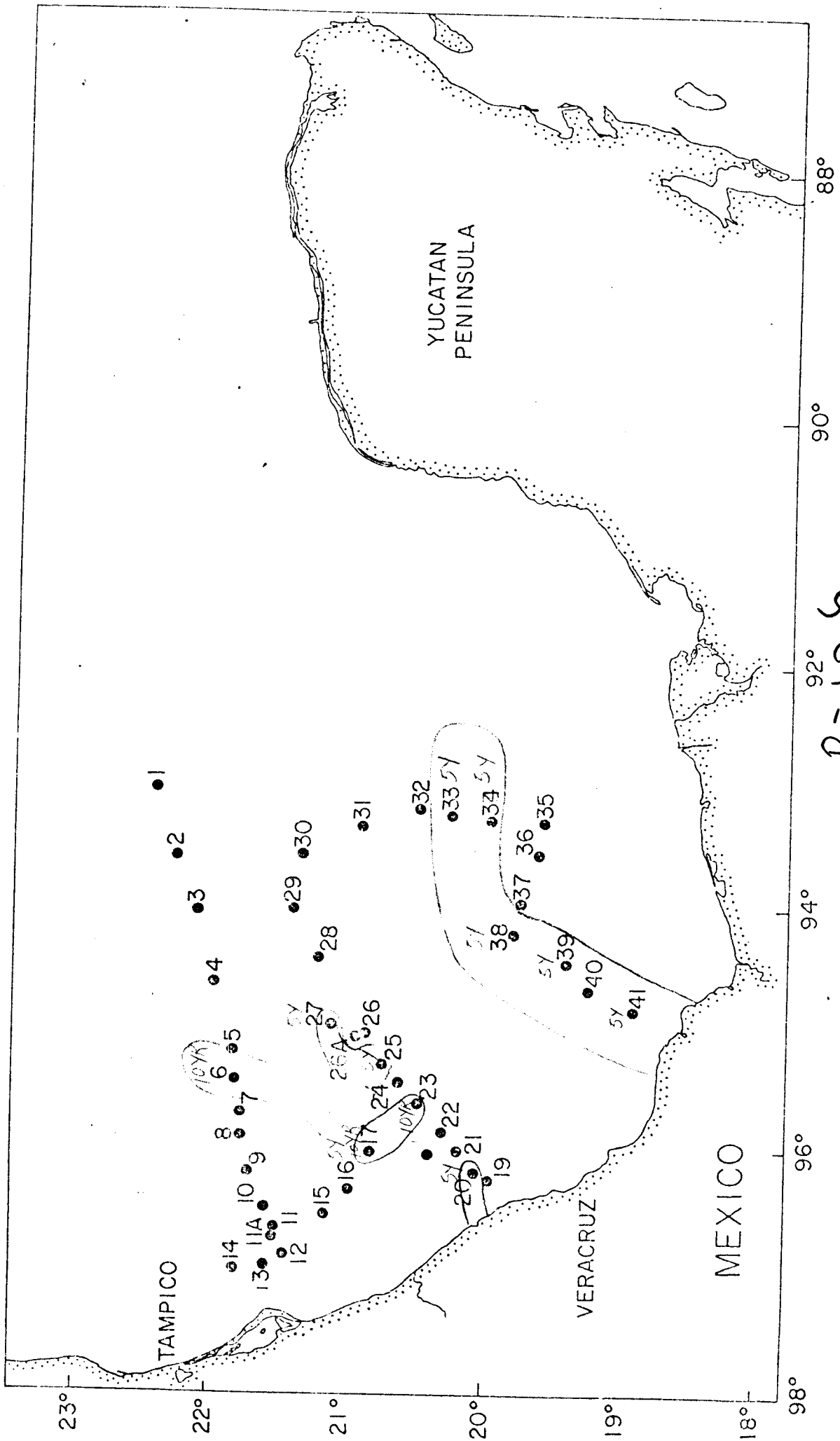
All the days at sea are assigned to National Science Foundation, Grant Number GA-36191X (Kennett, principal investigator).

CRUISE TR-126
LIST OF STATIONS

NUMBER	LAT. (N)	LONG. (W)	WATER DEPTH (sonic)	CORE DEPTH	PROVINCE
1	22°23.6'	93°03.0'	3540 m	28'7"	Tabasco Campeche Knolls
2	22°15.3'	93°33.5'	3630 m	25'8"	Vera Cruz Tongue
3	22°07.5'	94°05.0'	3600 m	26'8"	Vera Cruz Tongue
4	21°59.7'	94°37.5'	3550 m	25'6"	Vera Cruz Tongue
5	21°52.7'	95°11.7'	3150 m	30'	Mexican Ridges
6	21°51.6'	95°25.6'	3045 m	20'	Mexican Ridges
7	21°49.7'	95°41.5'	2920 m	20'	Mexican Ridges
8	21°47.8'	95°52.1'	2690 m	25'7"	Mexican Ridges
9	21°45.4'	96° 9.8'	3100 m	30'6"	Mexican Ridges
10	21°36.5'	96°26.4'	1750 m	23'9"	Mexican Ridges
11	21°32.3'	96°39.8'	1350 m	12'8"	Mexican Slope
11a	21°33.4'	96°42.4'	1350 m	30'2"	Mexican Slope
12	21°28.1'	96°50.7'	965 m	24'	Mexican Slope
13	21°36.2'	96°55.4'	560 m	30'	Mexican Slope
14	21°49.9'	96°58.2'	1290 m	27'7"	Mexican Slope
15	21°09.7'	96°30.5'	1030 m	25'	Mexican Slope
16	21°00.4'	96°16.1'	1550 m	27'6"	Mexican Slope
17	20°50.9'	96°01.3'	1950 m	25'4"	Mexican Ridges
18	20°25.9'	96°08.5'	1605 m	20'8"	Mexican Slope
19	19°58.5'	96°13.0'	710 m	24'10"	Mexican Shelf
20	20°04.5'	96° 8.0'	1315 m	25'6"	Mexican Slope
21	20°10.9'	96°00.3'	1920 m	18'	Mexican Slope
22	20°20.0'	95°51.7'	2130 m	21'2"	Mexican Slope
23	20°29.4'	95°37.4'	2410 m	24'6"	Mexican Ridges
24	20°37.4'	95°27.1'	2550 m	24'7"	Mexican Ridges
25	20°47.5'	95°16.0'	2760 m	33'	Mexican Ridges
26	20°55.4'	95°04.6'	3075 m	25'11"	Vera Cruz Tongue
26a	20°56.2'	95°05.0'	3050 m	30'5½"	Vera Cruz Tongue
27	21°08.4'	94°56.2'	3240 m	—	Vera Cruz Tongue
28	21°14.8'	94°26.2'	3350 m	33'9"	Vera Cruz Tongue
29	21°25.6'	94°01.0'	2700 m	35'3"	Vera Cruz Tongue
30	21°21.9'	93°32.2'	3040 m	28'4"	Tabasco Campeche Knolls

NUMBER	LAT. (N)	LONG. (W)	WATER DEPTH (sonic)	CORE DEPTH	PROVINCE
31	20°56.7'	93°18.9'	1970 m	29'5"	Tabasco Campeche Knolls
32	20°29.4'	93°12.8'	1650 m	32'9"	Tabasco Campeche Knolls
33	20°15.5'	93°14.1'	1450 m	24'5"	Tabasco Campeche Knolls
34	19°58.3'	93°15.9'	1250 m	28'8"	Tabasco Campeche Knolls
35	19°32.9'	93°16.2'	610 m	17'7½"	Tabasco Campeche Knolls
36	19°37.4'	93°33.8'	1100 m	12'9"	Tabasco Campeche Knolls
37	19°46.0'	93°57.0'	1360 m	23'	Tabasco Campeche Knolls
38	19°48.4'	94°13.3'	1650 m	28'10"	Tabasco Campeche Knolls
39	19°24.9'	94°26.4'	1500 m	28'6"	Tabasco Campeche Knolls
40	19°14.2'	94°39.7'	980 m	17'	Tabasco Campeche Knolls
41	18°53.3'	94°50.6'	720 m	23'	Mexican Slope

10 YR
5 Y
10 YR



T R = 126

CORE DESCRIPTION

Sedimentological Laboratory, GSO, U.R.I.

Core No.: TR 126

Cruise No.:

Date Retrieved:

Latitude:

Longitude:

Water Depth:

Depth ^{Top}	Color	Texture	Remarks
27	5Y 5/1 2.5Y 5/2 5Y 5/2	mottled	
4	2.5Y 6/2 5/2	mottled fine & coarse	
39	5Y 4/1	coarse & fine	
5	2.5Y 5/2	" " "	
30	2.5Y 5/2 6/2	" " "	
23	10YR 5/3 5Y 5/1 2.5Y 5/2	mottled	
11	2.5Y 4/2 3/0 5/2	fine & coarse	
8	2.5Y 5/2	" " "	
38	{ 2.5Y 4/2 5Y 4/1 5Y 5/2	" " "	
25	{ 5Y 5/2 5/3 4/3	" " "	

TR126

CORE DESCRIPTION

Sedimentological Laboratory, GSO, U.R.I.

Core No.:

Cruise No.:

Date Retrieved:

Latitude:

Longitude:

Water Depth:

Top Depth	Color	Texture	Remarks
26A	2.5Y 5/2	fine & coarse	
3	2.5Y 6/2	" " "	
11A	2.5Y 3/2	" " "	
20	{ 5Y 5/2 3/2	coarse	
37	5Y 4/1	coarse	
7	2.5Y 5/2 6/2	fine & coarse	
34	5Y 5/2	coarse	
1	2.5Y 5/2	fine	
17	{ 10YR 5/2 2.5Y 5/2	coarse & fine	
21	2.5Y 5/2	" " "	
6	10YR 5/3 2.5Y 5/2	" " "	
33	5Y 5/1 5/2	" " "	
12	2.5Y 4/2	coarse	
16	5Y 5/3	coarse & fine	
24	2.5Y 5/2	" " "	
22	2.5Y 5/2	fine	
18	2.5Y 5/2	coarse & fine	

TR126

CORE DESCRIPTION			
Sedimentological Laboratory, GSO, U.R.I.			
Core No.:		Cruise No.:	Date Retrieved:
Latitude:		Longitude:	Water Depth:
Depth	Color	Texture	Remarks
TOP			
28	2.5Y 5/2	fine	
29	2.5Y 4/2	fine	
36	{ 2.5Y 3/2 2.5Y 2.5/0 5/2	coarse grains of these 3 different colors	
15	2.5Y 4/2 2.5Y 6/2	coarse	
26	2.5Y 5/2	fine & coarse	
41	5Y 5/2	fine	
31	2.5Y 5/2	fine	
35	5Y 5/2	fine	
14	{ 2.5Y 4/2 2.5Y 3/0 6/2	coarse	
19	2.5Y 4/2 3/0 6/2	coarse	
13	2.5Y 4/2 4/0 3/0	coarse	
10	2.5Y 5/2	coarse & fine	
9.	2.5Y 5/2 8/0	coarse & fine	

Core #	Oriented	Condition (+# of sections)
1	yes ^{cut}	cut - magnetics done (3)
2	yes ^{cut}	uncut - magnetics done (3)
3	(yes ?)	uncut - magnetics done
4	(yes ?)	uncut - magnetics done
5	no	liner cut due to implosion
6	no	2 sections - no distinguishing features
7	yes	2 sections
8	uncut	
9	no	no distinguishing features
10	no	implosion - liner cut away
11	yes	needs angle to be fixed with a protractor
11A	no	implosion - liner cut away
12	no	sediment fell out on deck - disoriented
13	no - has not been cut	attempting to determine <u>definitely</u> which one the long section in cold room is, there are shorter CD, EF sections
14	yes	3 - 2 sections done
15	no	
16	uncut	
17	uncut	
18	no	imploded + sections cut away in these three
19	no	
20	no	
21	yes	2 section core
22	uncut	
23	uncut	
24	no	unable, imptal ^{to orient} due to no distinguishing features; this has an 87cm imploded section which has not been cut yet.
25	no	imploded - section cut
26 26A	no no	short sections - cut

Core #	Oriented	Condition (+ no. of sections & section core)
27	yes	implosion - first sections have been cut away
28	no	
29	no	
30	no	
31	uncut	
32		
33	no	implosion - section cut away
34	uncut	
35	no	implosion section cut away
36		has not been located - may be the long section in coring lab?
37	no	no distinguishing features imploded - short sections - have been cut.
38	no	
39	no	
40	no	
41	no	
		no distinguishing features

Status of Core Orientation:

There are a possible 15 cores (counting uncut cores) they are correctly oriented.

The main problem with doing imploded cores is that sections have been cut away but what sections have been removed is usually not written in the coring log. The reason so few cores are done is because of the implosions at the top of the core.

Core catcher notes TR 126 -

126-1

Crassoformi - no inflata, menardi or ^{pink rubra} Pullencheri - many pteropods. - possibly about .72.

2. inflata + some menardi menardi! Some shallow-water bathous + deep Pyrgo etc - May be mixed?

3. Many dutchrei - rubra very much reduced
Very much solution. Orbulina important.

4. G flexuosa inpt. ; X fauna. Flakes of ^{fine} biotite
Fair amount of solution.

5. Ash in core catcher - rich ash + a pumice lump.

inflata ; rubra ; truncat ; folemensis
Very cold -

Core 11 -

right side - sample only

oriented by angle of cut + by kumpin line
 the angle must be adjusted because
 line of split was not the same.

7 done

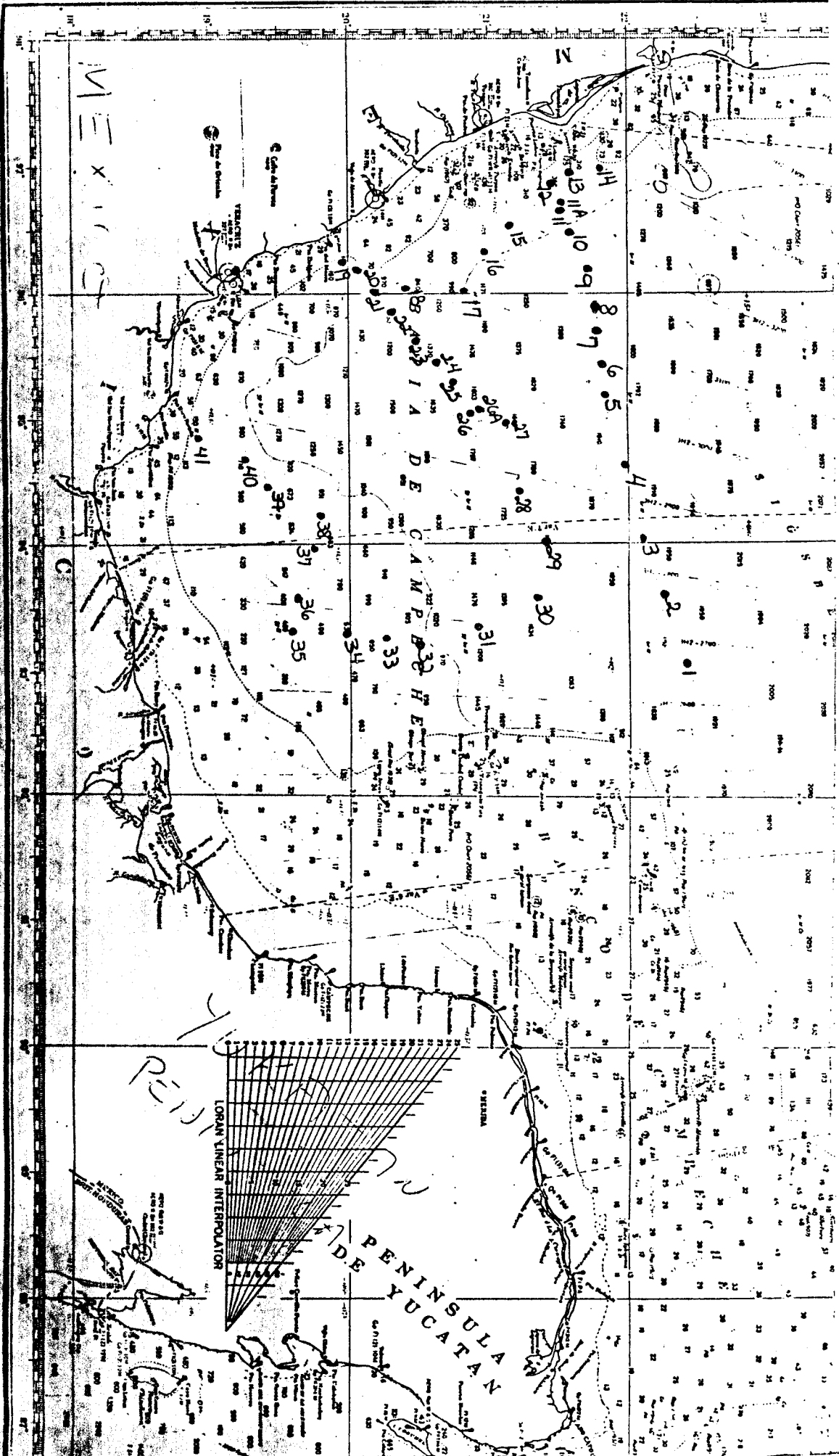
21 done

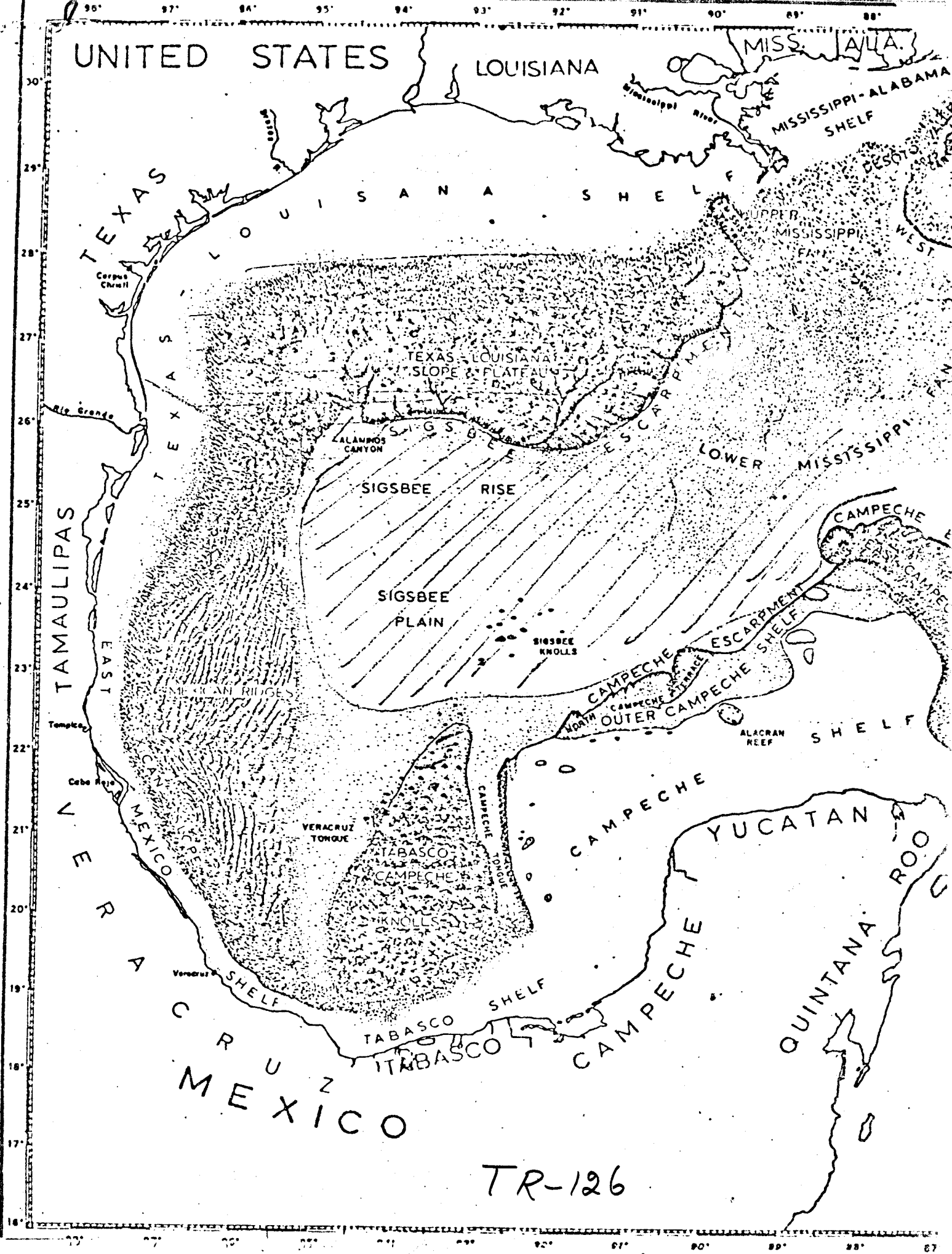
27 matched by nicks that do not match up the
 line of split \therefore needs to be adjusted.

Core 6 could not be lined up.

There are impledged sections that have not been
 cut yet because they could not be done with
 the saw.

TR-126





TR-126