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GEOCHEMICAL INVESTIGATION OF AN EXTRACT OF A CORE  
SAMPLE FROM THE SHERWOOD SANDSTONE, MICKLE  
TRAFFORD-1, UNITED KINGDOM

by

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Investigation 9.55.236

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GEOCHEMICAL INVESTIGATION OF AN EXTRACT OF A CORE SAMPLE FROM  
THE SHERWOOD SANDSTONE, MICKLE TRAFFORD-1, UNITED KINGDOM

1. INTRODUCTION

Geochemical analyses have been carried out on an extract from the following sample (request telex ukl 436603 of 6/9/84):

- Mickle Trafford-1, core sample, sherwood sandstone, depth approximately 1000 ft.

2. RESULTS AND CONCLUSIONS

The results which are given in Tables 1-2 and Figures 1-3 indicate the following:

- the amount of organic carbon after extraction with ethyl acetate is 0.5% wt. This is probably caused by the solid hydrocarbons microscopically observed (Table 1).
- this impregnation has not been bacterially degraded.
- it has been expelled from an immature source rock.
- the data suggest that the organic matter of this source rock was of algal origin.

# MACERAL DESCRIPTION OF 1 SAMPLE FROM WELL MICKLE TRAFFORD-1

DEPTH IN FT	SAMPLE TYPE
----------------	----------------

1000.0	CORE
--------	------

ORGANIC													INORG.							
SAPROPELIC ORG. MATTER	VITR.		LIPIDINITE						INERT.				UNDEFINED MINERALS	FRAGMENTAL FYRITE	AGGREGATES OF FYRITE	CRYSTALS OF FYRITE				
	TELOCOLLINITE	TELINITE	DESMOCOLLINITE	SPORINITE	CUTINITE	RESINITE	LIPIDOPETRAINITE	ALGAE		MICROFLANKTON	EXSUDATINITE	SCLEROTINITE					FUSINITE	MACRINITE	MICRINITE	
								BOTRYOCOCCUS	TASMANITES											
																				OTHER ALGAE

													+				*	
--	--	--	--	--	--	--	--	--	--	--	--	--	---	--	--	--	---	--

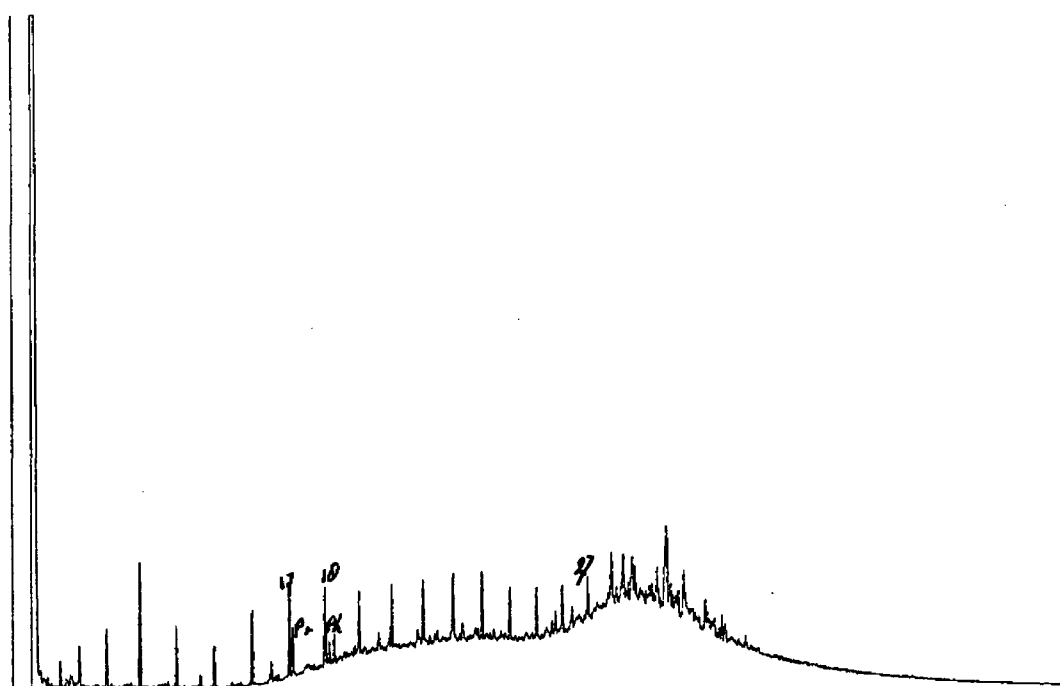
L E G E N D	
*	: ABUNDANT
+	: COMMON
/	: FEW
-	: RARE

Table 2 - Geochemical data of extract

	Mickle Trafford-1
	core sample
	Sherwood SST
	about 1000 ft
% ethyl acetate extract	0.3
% organic carbon after extraction	0.5
extract/carbon	0.6
% sulphur	-
ppm V as metals	-
ppm Ni as metals	-
Pristane/phytane	1.8
Pristane/nC17	0.8
Phytane/nC18	0.4
C15 distribution	
1-ring	N.D.
2-ring	N.D.
3-ring	N.D.
C30-distribution	
3-ring	11
4-ring	39
5-ring	50
C29 VR/E (DOM)	0.39 (52)
% saturates	17
% aromatics	45
% heterocompunds	38
$\delta^{13}\text{C}_{\text{oo}}^{\text{o}}$	-29.7

- Not determinable due to small amount of extract

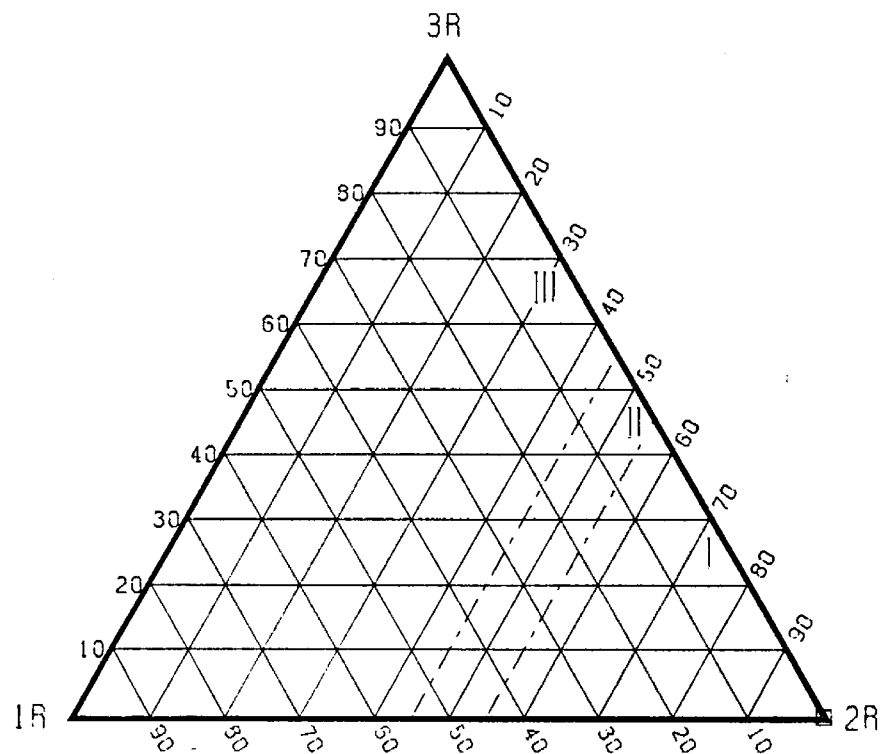
N.D. not detectable due to low intensities



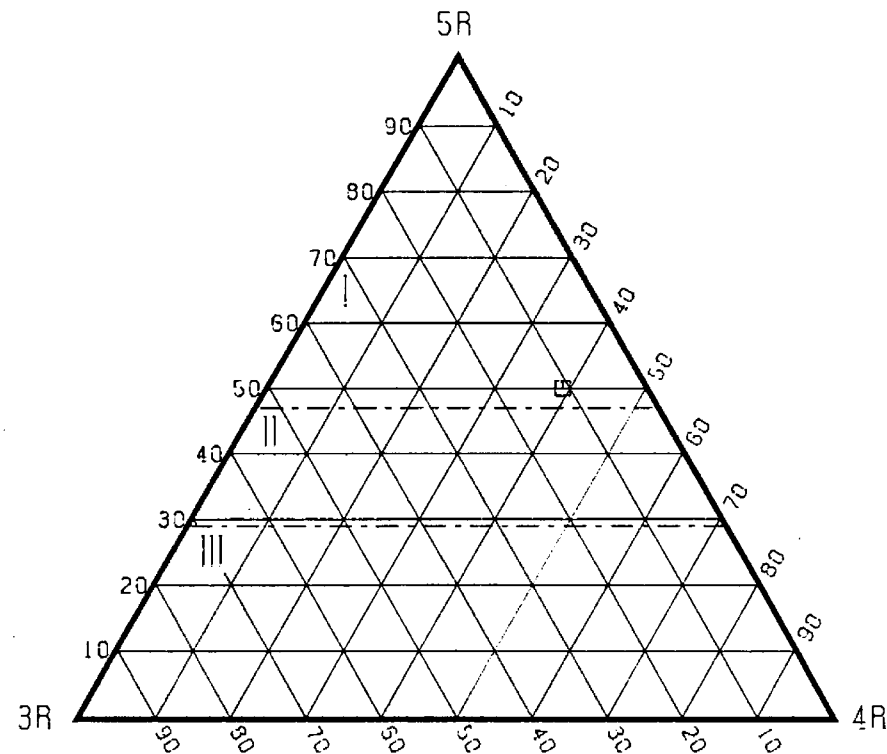
GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

FIG. 1. MICKLE TRAFFORD-1, SHERWOOD SST, CORE

# C<sub>15</sub>-RING DISTRIBUTION



# C<sub>30</sub>-RING DISTRIBUTION



- I LANDPLANT-DERIVED CRUDES WITH SUBSTANTIAL RESIN CONTRIBUTION TO SOURCE MATTER
- II CRUDES OF MIXED ORIGIN
- III CRUDES DERIVED FROM SOM AND/OR ALGAL MATTER

LEGEND
□ - MICKLE 159FF060-1, CORE, ca. 1000F1, SHERWOOD SST

MASS CHROMATOGRAM  
 05/27/84 14:27:00  
 SAMPLE: UK: MICKLE TREFFORD SHERWOOD SST PE 10/100/.4UL  
 RANGE: G 20, 30 LABEL: N 0, 4.0 QUAN: A 0, 1.0 BASE: U 20, 3

DATA: SER8945 #1  
 ENHANCED (368 IN 0T)

SCANS 1600 TO 2983

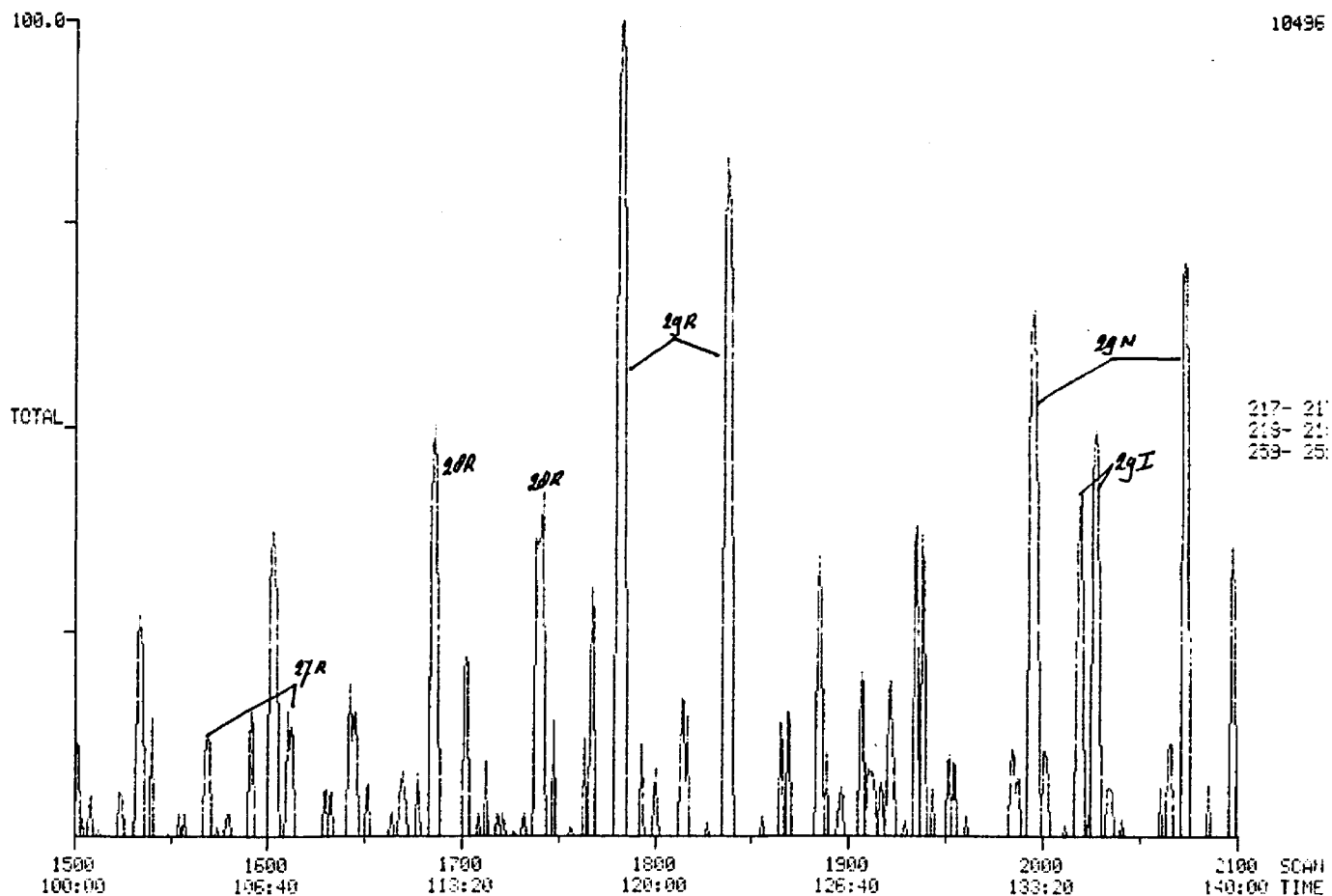
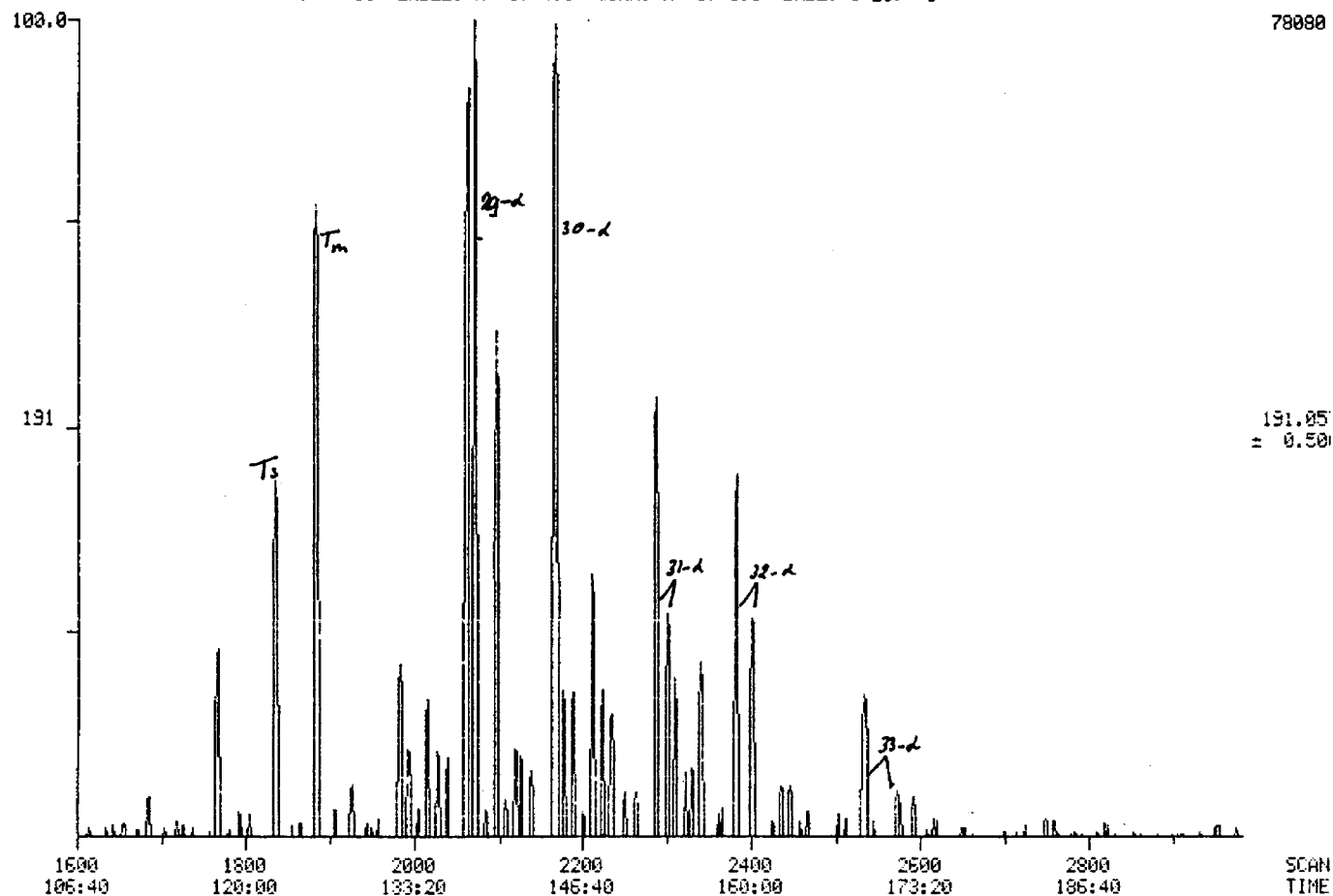


FIG. 3



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