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GEOCHEMICAL INVESTIGATION OF EXTRACTS
FROM CORE SAMPLES FROM WELL HEATH FARM-1
(1712.0 AND 1716.8 FT, WESTPHALIAN)
UNITED KINGDOM.
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Investigation 9.5.5240

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GEOCHEMICAL INVESTIGATION OF EXTRACTS FROM TWO CORE
SAMPLES FROM WELL HEATH FARM-1
(1712.0 AND 1716.8 FT, WESTPHALIAN), UNITED KINGDOM

1. INTRODUCTION

Geochemical analyses have been carried out on the extracts of the following two core samples (request uk1 327892 of 21-3-84):

-Well HEATH FARM-1, 1712.0 FT, WESTPHALIAN.

-Well HEATH FARM-1, 1716.8 FT, WESTPHALIAN.

The results are given in Table 2 and Figures 1-7.

As already reported in RKTR 84.127 both samples can be regarded as excellent source rocks for gas and oil. (sniff=more than 900 units, type=mixed, maceral description see Table 1).

Since only small amounts of samples were available geochemical analyses could only be carried out on either the original or on the artificially matured sample. Therefore the artificial maturation of sample 1716.8 ft has been carried out on the ethyl acetate extracted sample.

2 CONCLUSIONS

The geochemical data suggest that both samples are similar.

Both source rock samples are immature and contain structureless organic matter with a contribution of waxes (land-plant and/or algal origin).

The extract/organic carbon ratio of the heated sample suggests that the oil generating capacity of these source rock samples is rather low. Since in the investigated interval of 16 ft only three samples show a similar type, the amount of oil generated by this interval is expected to be small.

MACERAL DESCRIPTION OF 10 SAMPLES FROM WELL HEATH FARM-1

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

SAPROPELIC ORG. MATTER	ORGANIC											INCRG.							
	VITR.		LIPIDINITE							INERT.									
	TELOCOLLINITE	TELINITE	DESMOCELLINITE	SPORINITE	CUTINITE	RESINITE	LIPIDOFILINITE	BOTRYOCOCCLUS	TASMANITES	OTHER ALGAE	MICROPLANKTON		EXSUDATINITE	SCLEACTINITE	FUSINITE	MACRINITE	MICRINITE	UNDEFINED MINERALS	FRAMBOIDAL PYRITE

1707.3	CORE	-		+	-		/				/	-		*	-	-
1710.7	CORE		*	*	+		/	+			/	*		*	-	*
1712.0	CORE	*		-	*	-	-	+	-		-	+		+	*	-
1716.2	CORE		/	*	+	-	-	+	-		-	-		/	+	/
1716.7	CORE	+		+	+	-	+	-			-	-		+	*	/
1716.8	CORE	+		*	+	-	/	+	-		-	-		+	*	/
1719.6	CORE	-		+	-		-	-			/	-		*	-	-
1726.6	CORE	/		+	-	-	-	/			-	-		/	*	/
1734.9	CORE	-		+	-		-				/	-		*		-
1748.4	CORE	-		+	-		-				/	-		*		-

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

1712.0 F : INITIAL MICRINISATION S.O.M.
RESINITE = FLUORINITE

1716.8 F : RARE MEGASPORES
INITIAL MICRINISATION S.O.M.
VITRINITE-2 GRADES INTO S.O.M. ASSOCIATED WITH FRAM PYRITE
RESINITE = FLUORINITE

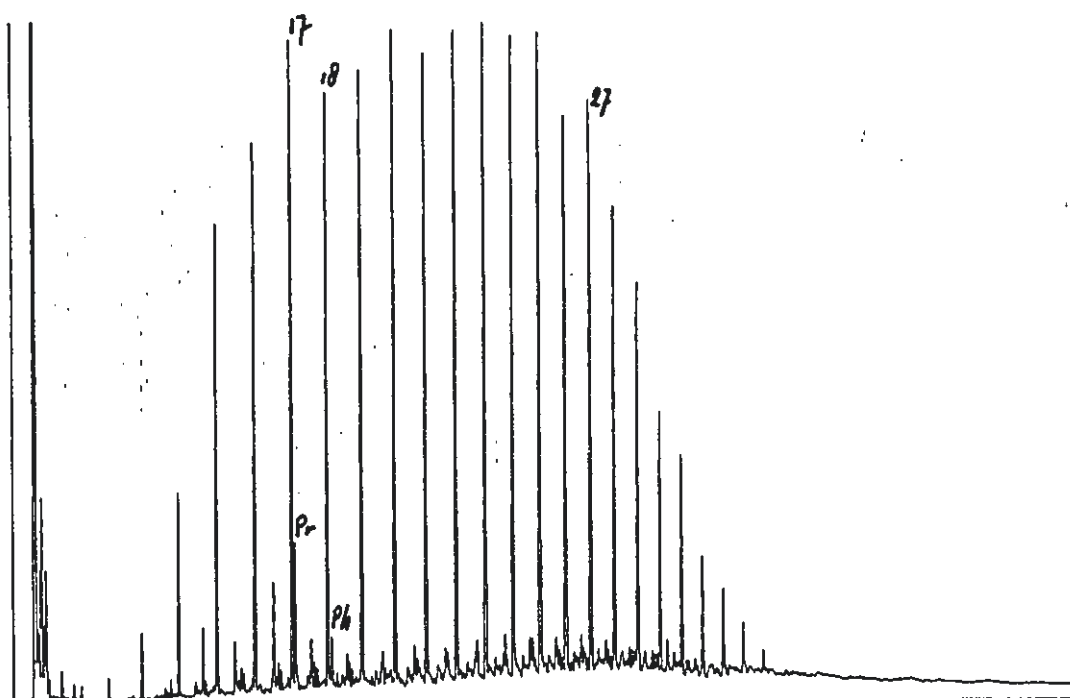
Table 2 GEOCHEMICAL DATA OF EXTRACTS
HEATH FARM-1, UNITED KINGDOM, CORES, WESTPHALIAN

	1712.0 FT heated 6 d 330C	1716.8 FT orig. heated 6 d 330C	
% ethyl acetate extract	3.8	1.7	0.4
% organic carbon after extr.	20.5	20.1	20.0
extract/carbon after extraction	0.2	0.1	0.02
% sulphur	1.2	1.6	-
ppm V as metals	-	-	-
ppm Ni as metals	-	-	-
Pristane/phytane	2.2	3.5	0.9
Pristane/n-C17	0.2	3.4	0.1
Phytane/n-C18	0.1	0.9	0.1
C15 distribution			
1-ring	ND	55	51
2-ring	ND	23	37
3-ring	ND	22	12
C30 distribution			
3-ring	28	24	17
4-ring	42	37	59
5-ring	30	39	24
C29 VR/E (DOM)	-	0.80(65)*	-
% saturates	12	5	7
% aromatics	37	27	34
% heterocompounds	51	68	59
δ 13C o/oo(extract)	-26.3	-25.7	n.d.

ND not determinable due to low intensities

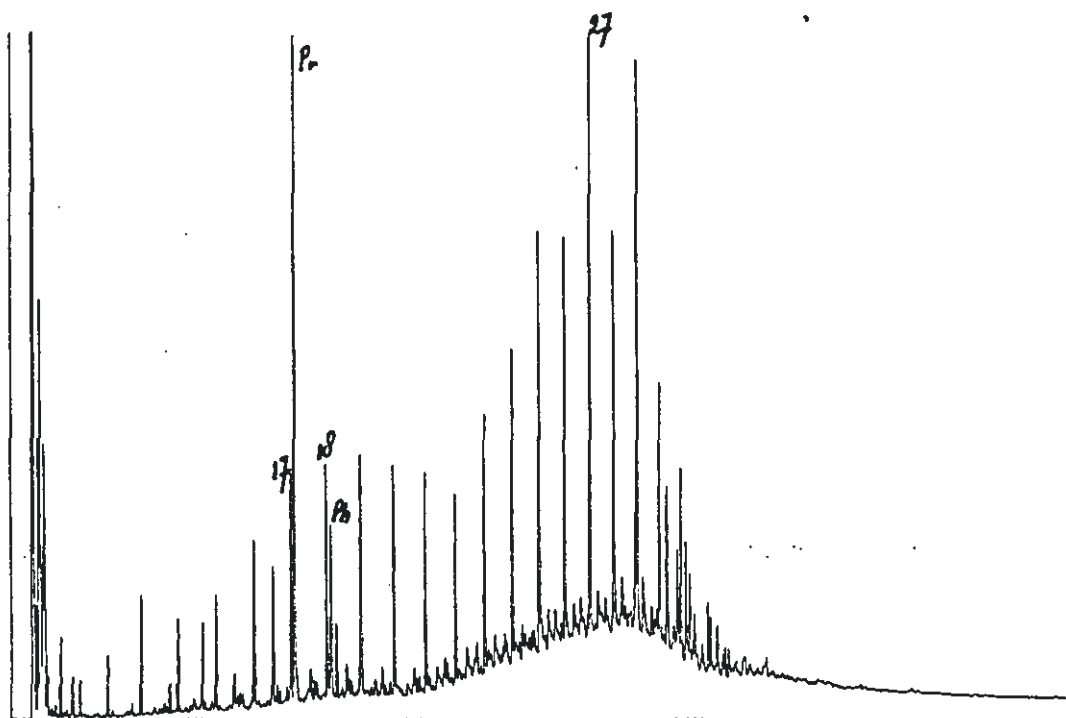
n.d. not detectable due to small amount of extract

* not reliable(probably too high)due to the presence of waxes



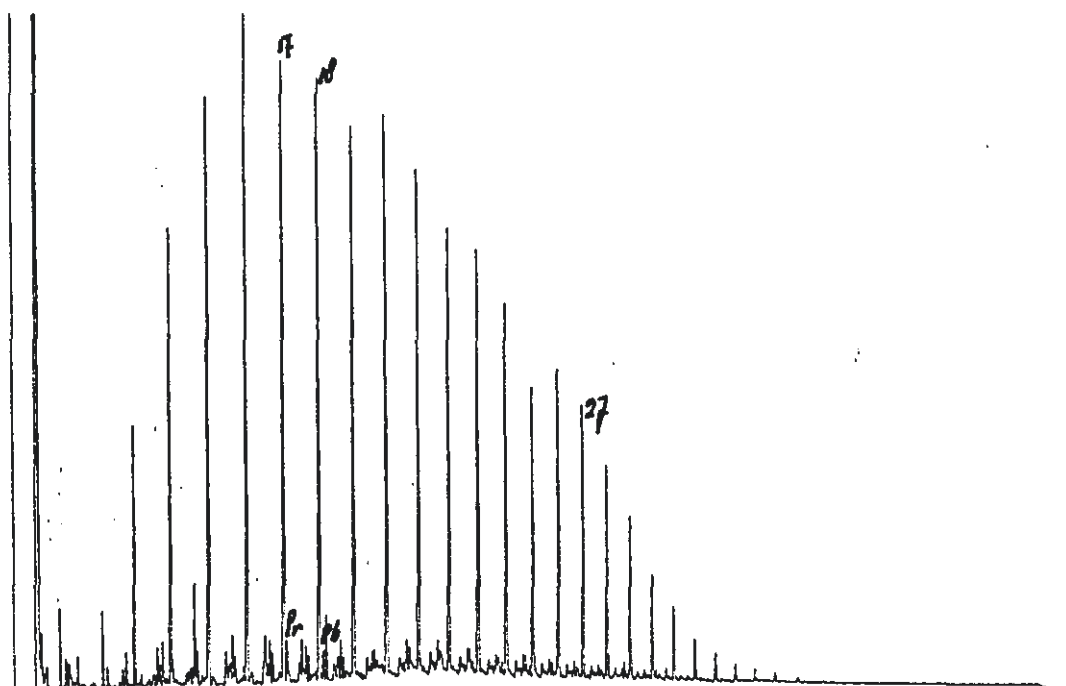
GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

FIG. 1. U.K., HEATH FARM-1, 1712. OFT, HEATED



GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

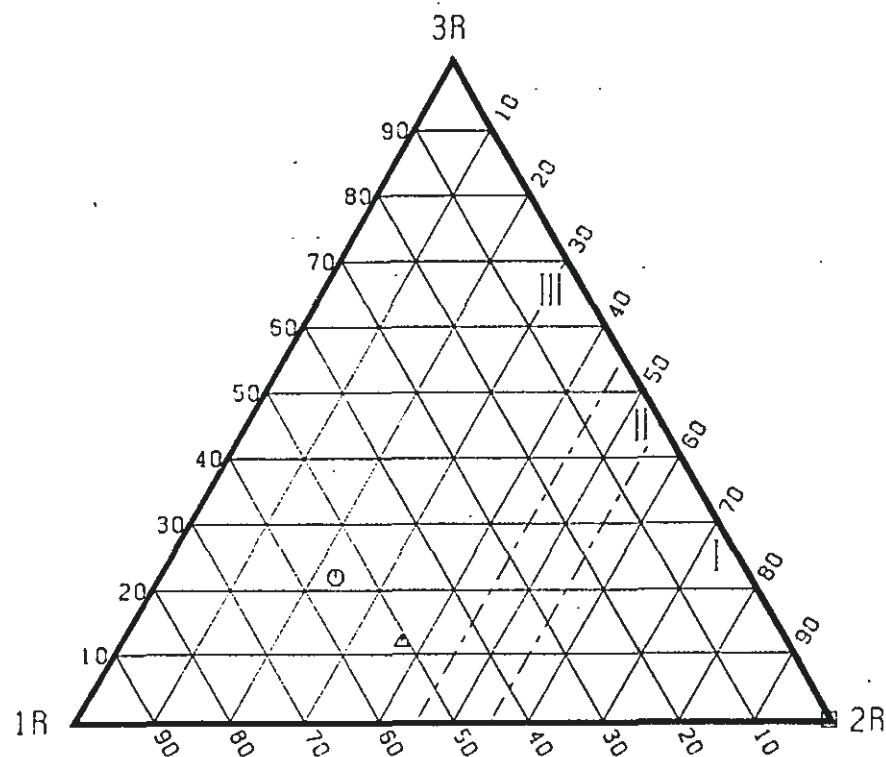
FIG. 2. U.K.. HEATH FARM-1, 1716.8FT, ORIGINAL



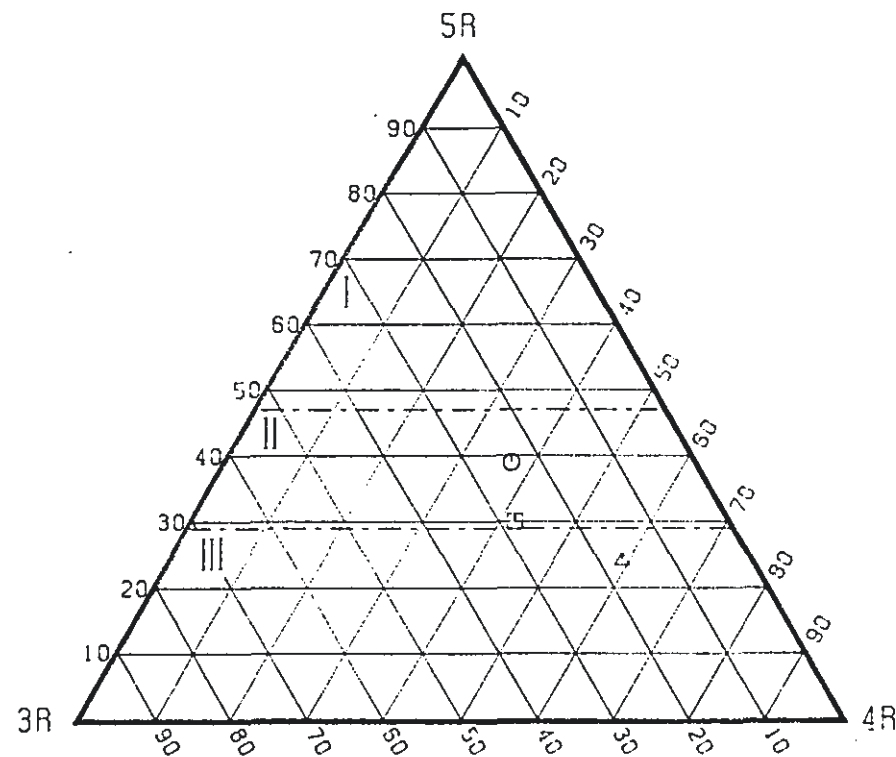
GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

FIG. 3. U.K.. HEATH FARM-1, 1716.8FT, HEATED

C₁₅-RING DISTRIBUTION



C₃₀-RING DISTRIBUTION



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

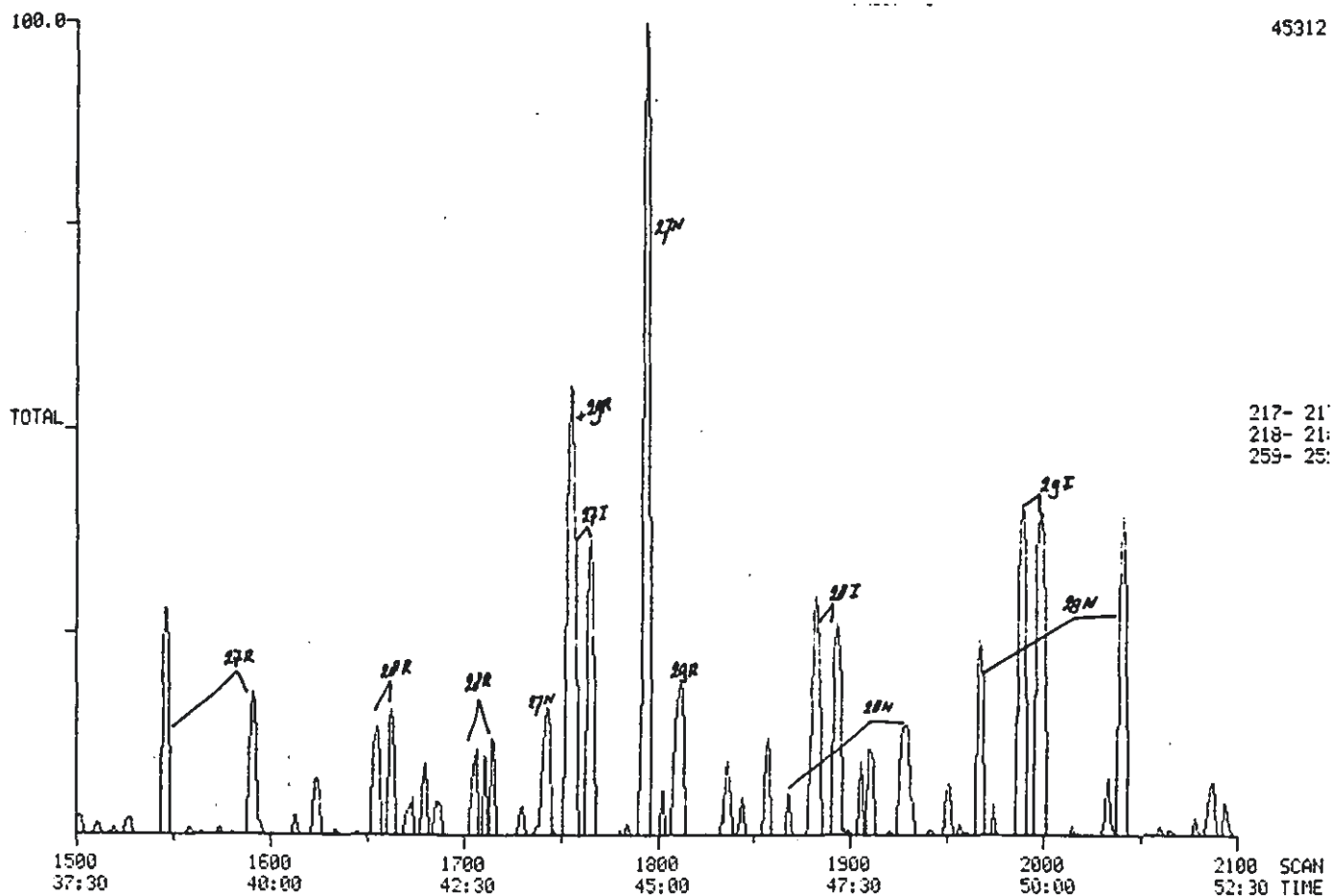
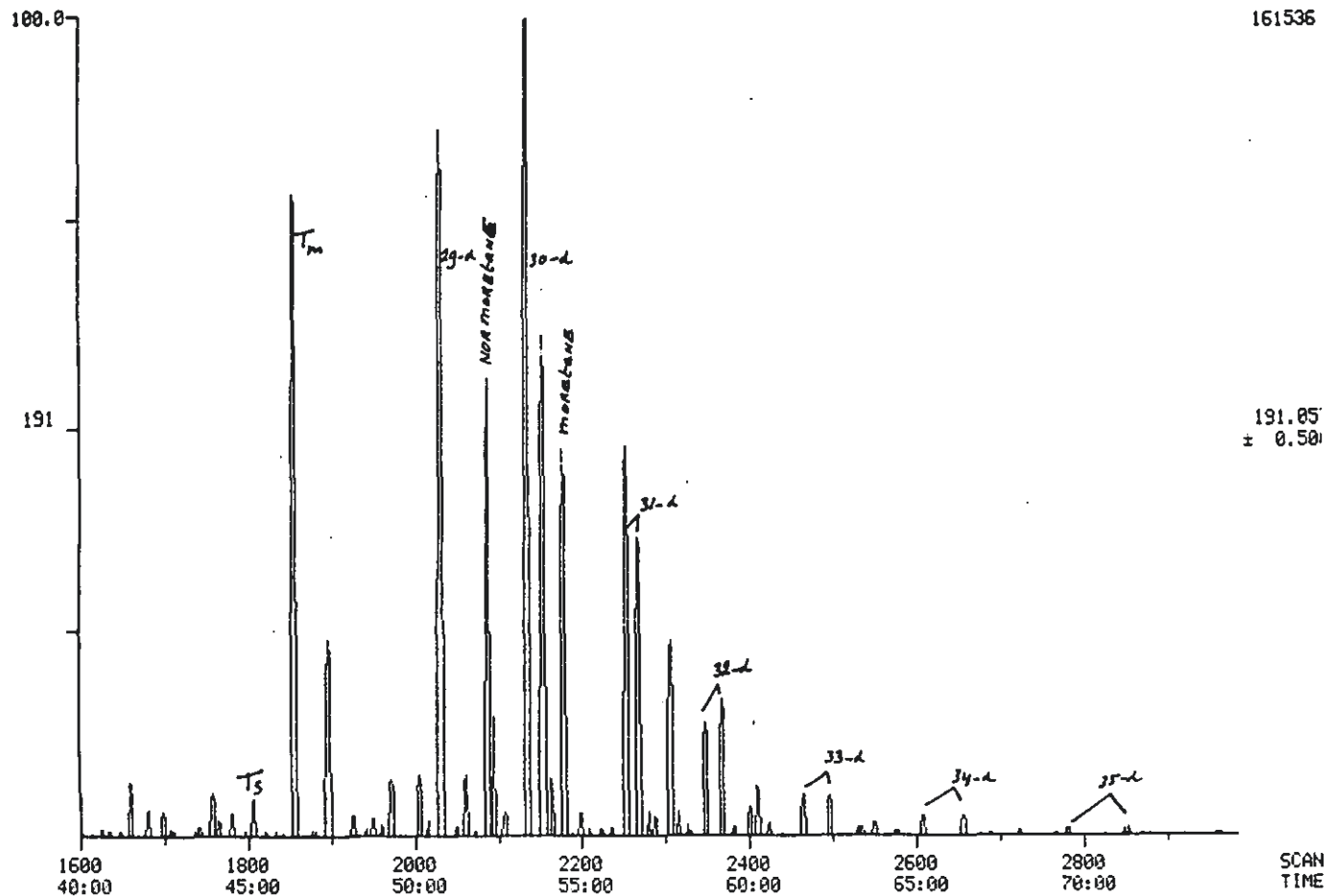
LEGEND

- - HEATH FARM-1, 1712, OFT, HEATED
- - HEATH FARM-1, 1716, 8F1, ORIGINAL
- Δ - HEATH FARM-1, 1716, 8F1, HEATED AFTER EXTR.

SAMPLE: UK : HEATH FARM-1 1716.8 FT PE 3/30/.4UL

RANGE: G 20, 30 LABEL: N 0, 4.0 QUAN: A 0, 1.0 BASE: U 20, 3

161536



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FIG. 5

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