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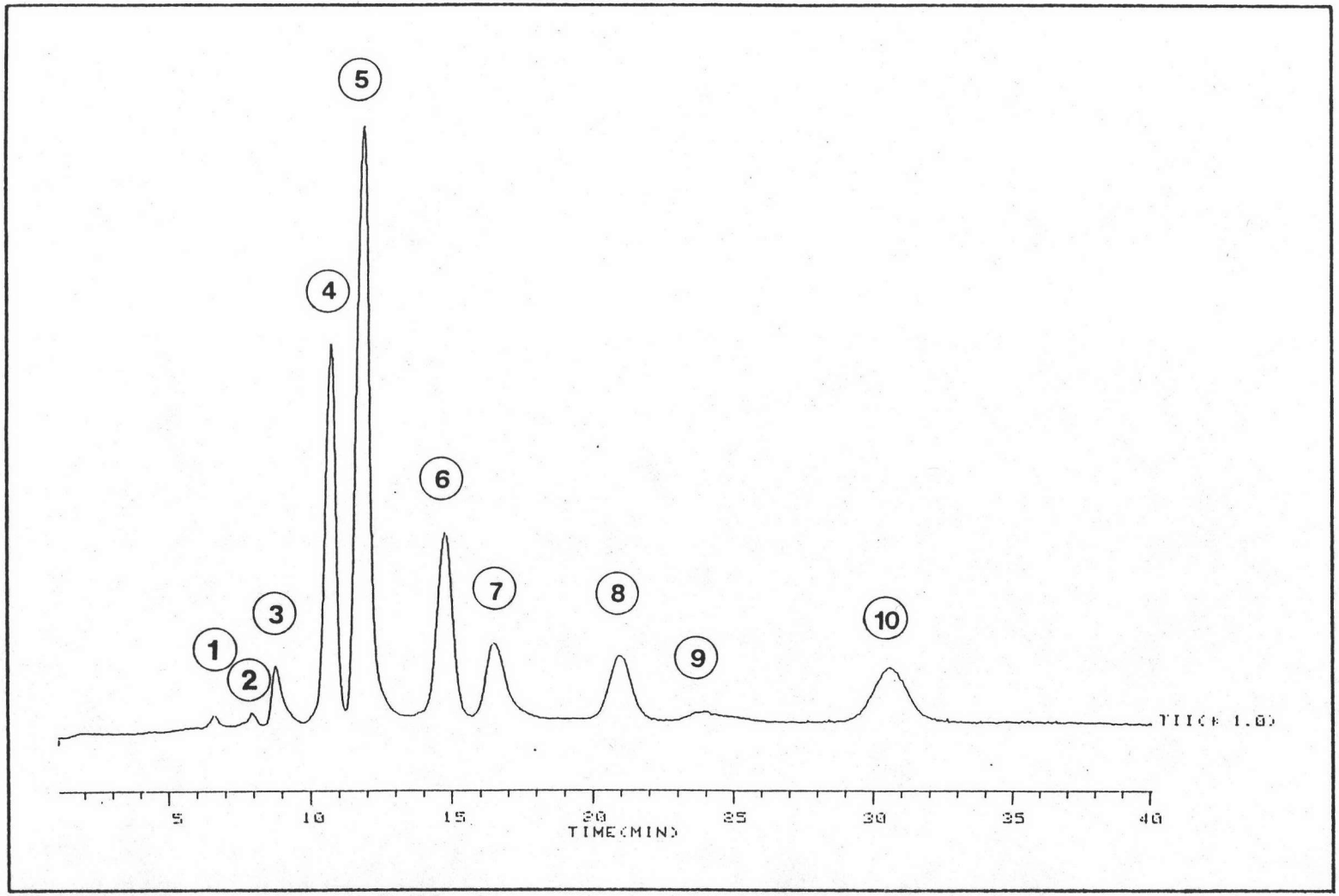

Figure 1 The gas chromatogram of GC-MS analysis of Precipitate I

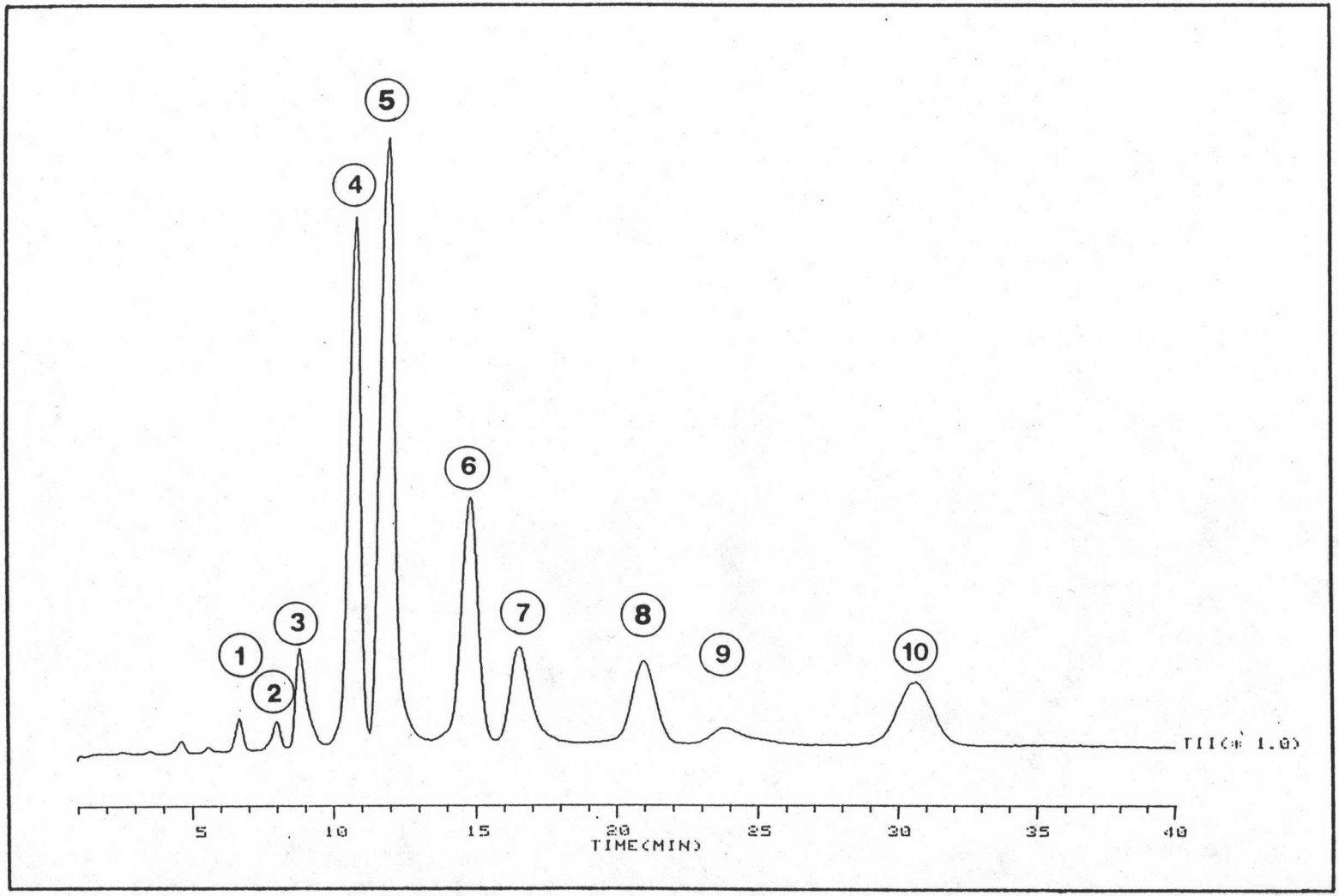

Figure 2 The gas chromatogram of GC-MS analysis of Precipitate II

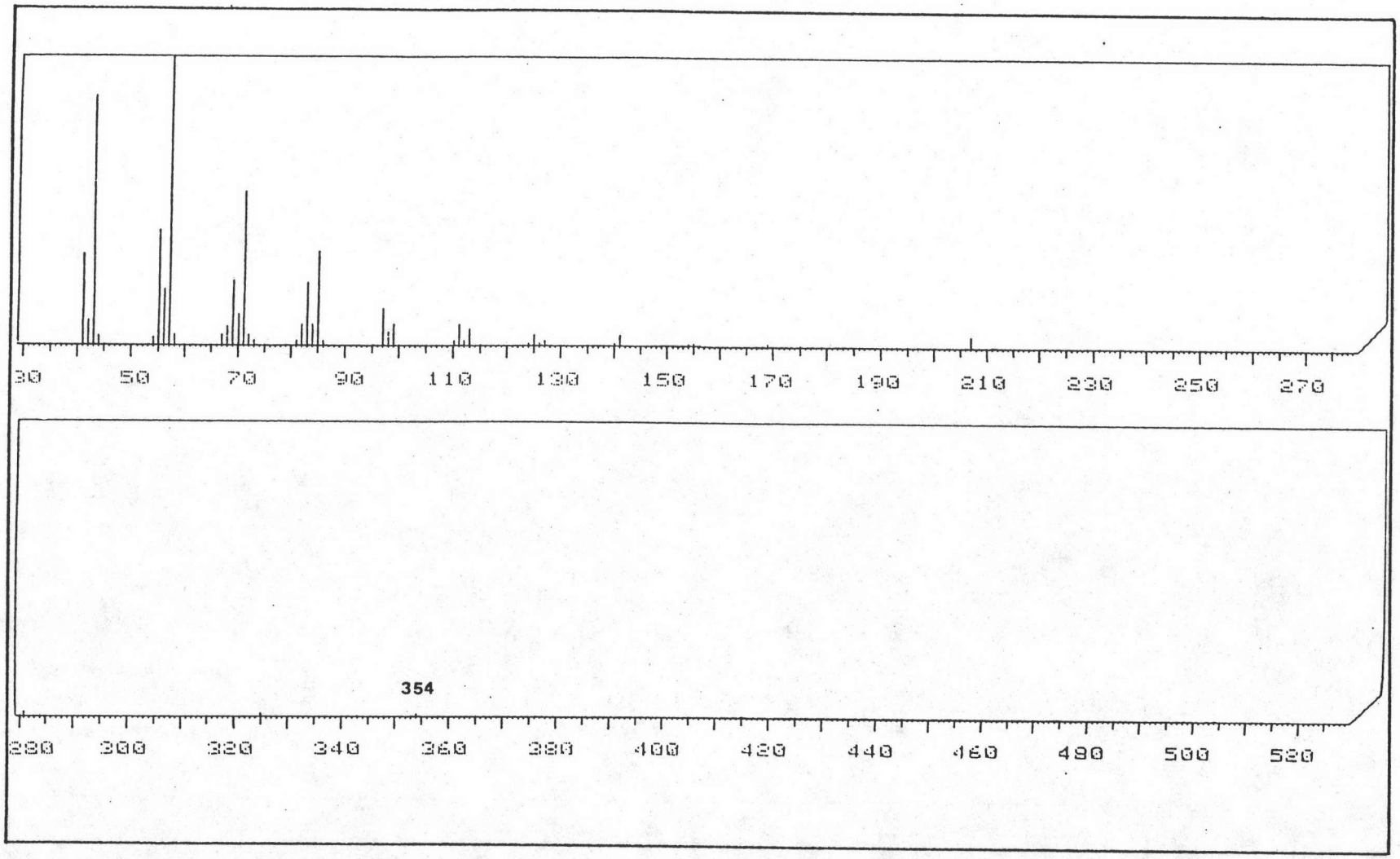

Figure 3 The mass spectrum of Peak 1 of GC-MS analysis of Precipitate I and II

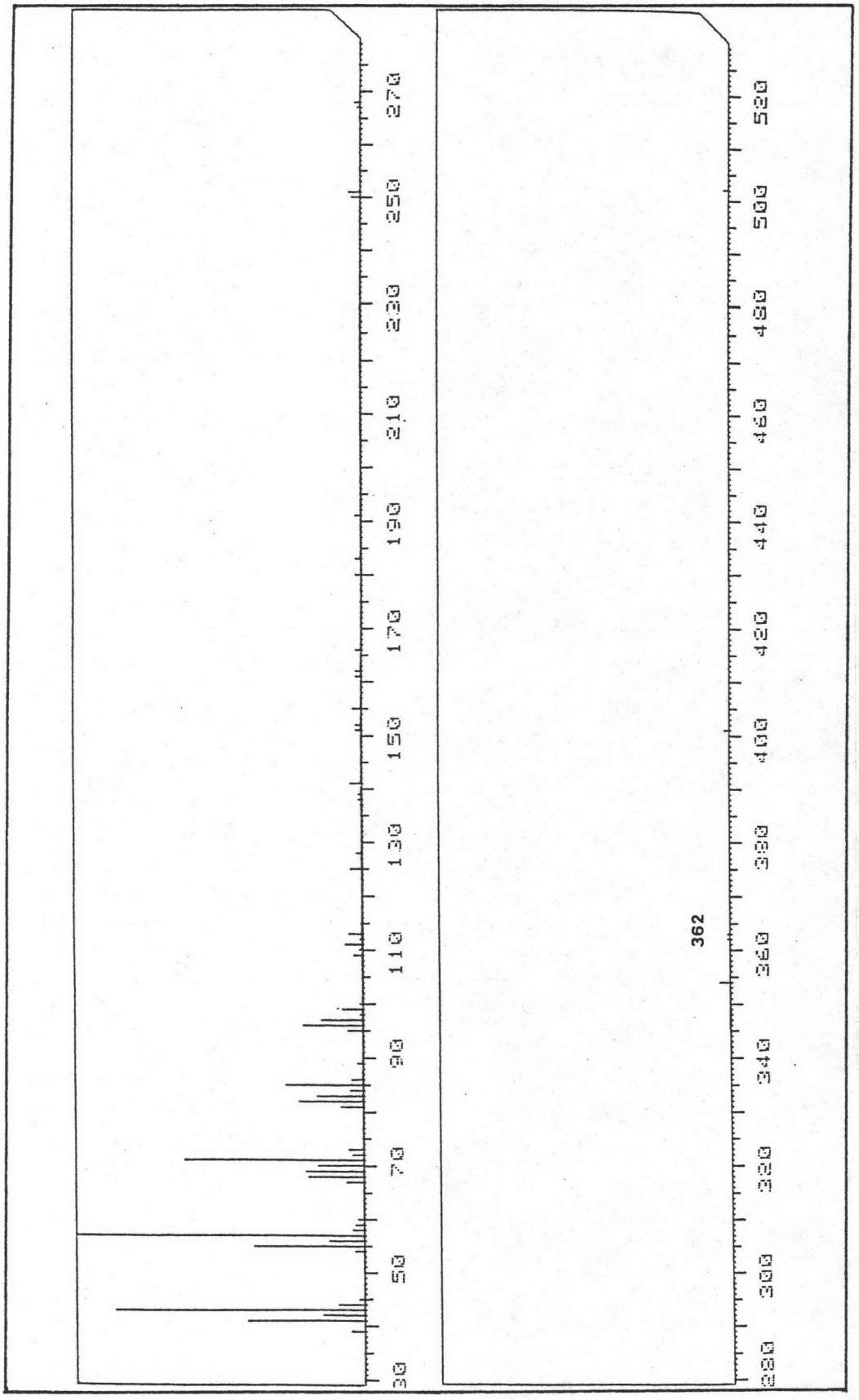

Figure 4 The mass spectrum of Peak 2 of GC-MS analysis of Precipitate I and II

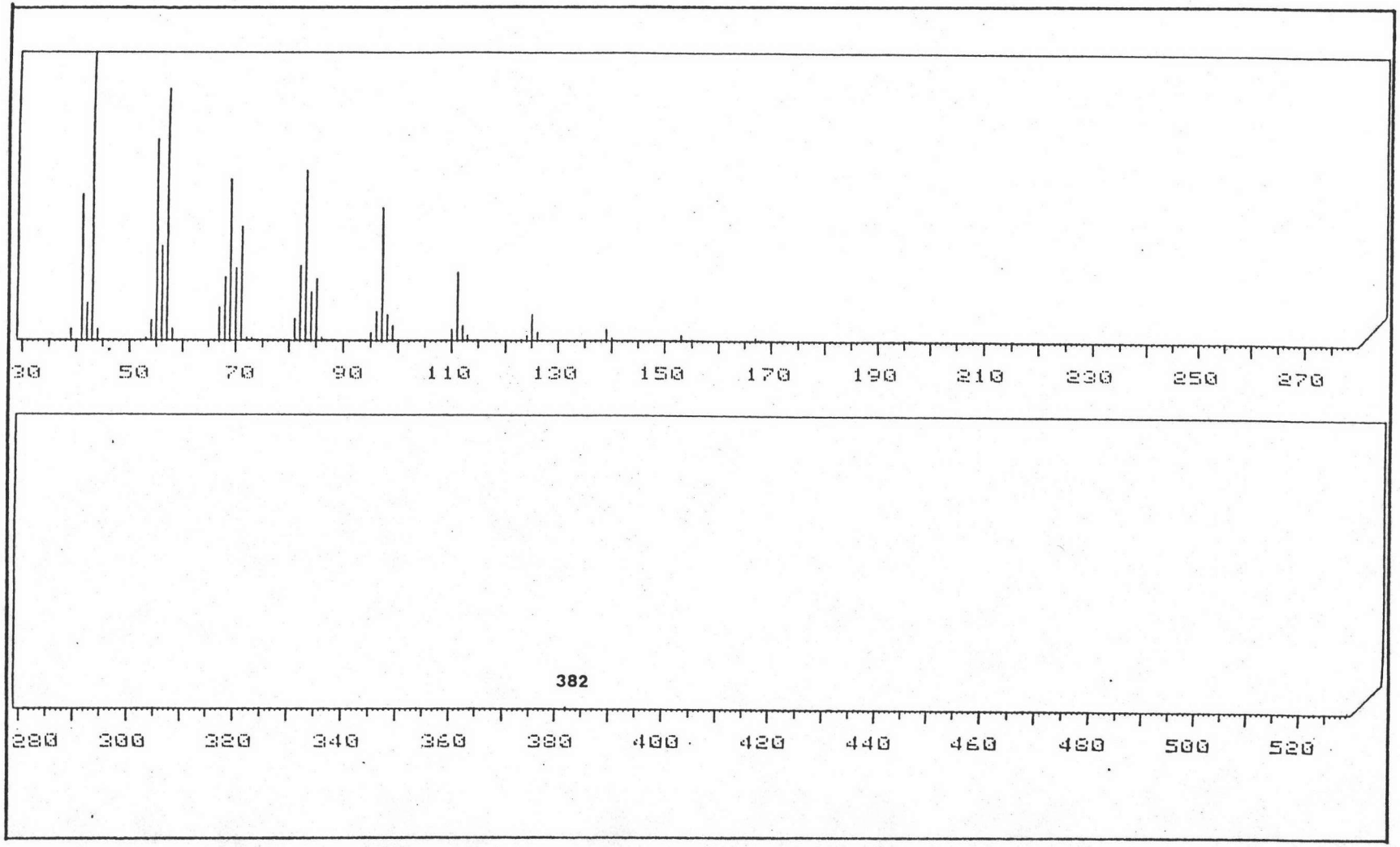

Figure 5 The mass spectrum of Peak 3 of GC-MS analysis of Precipitate I and II

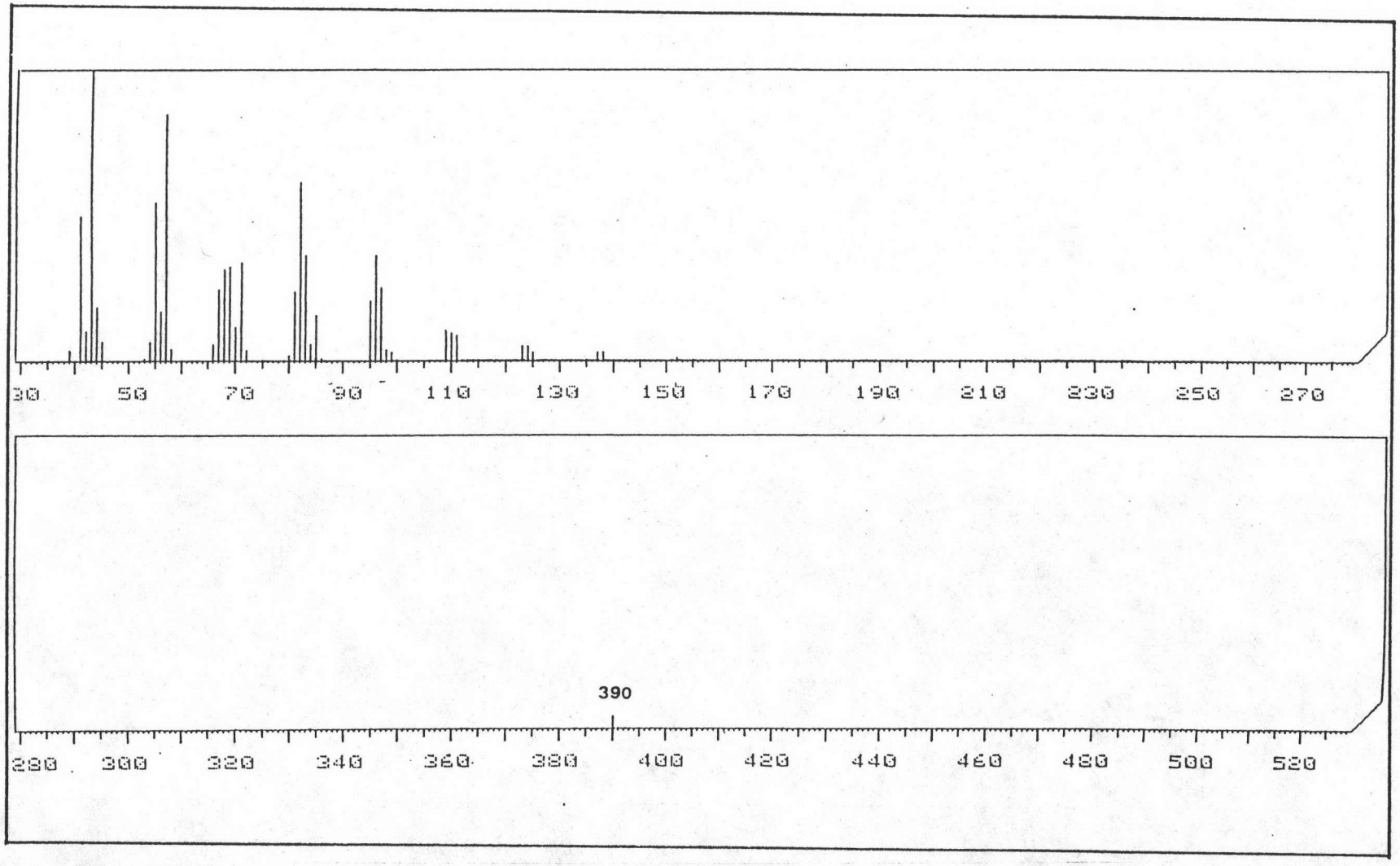

Figure 6 The mass spectrum of Peak 4 of GC-MS analysis of Precipitate I and II

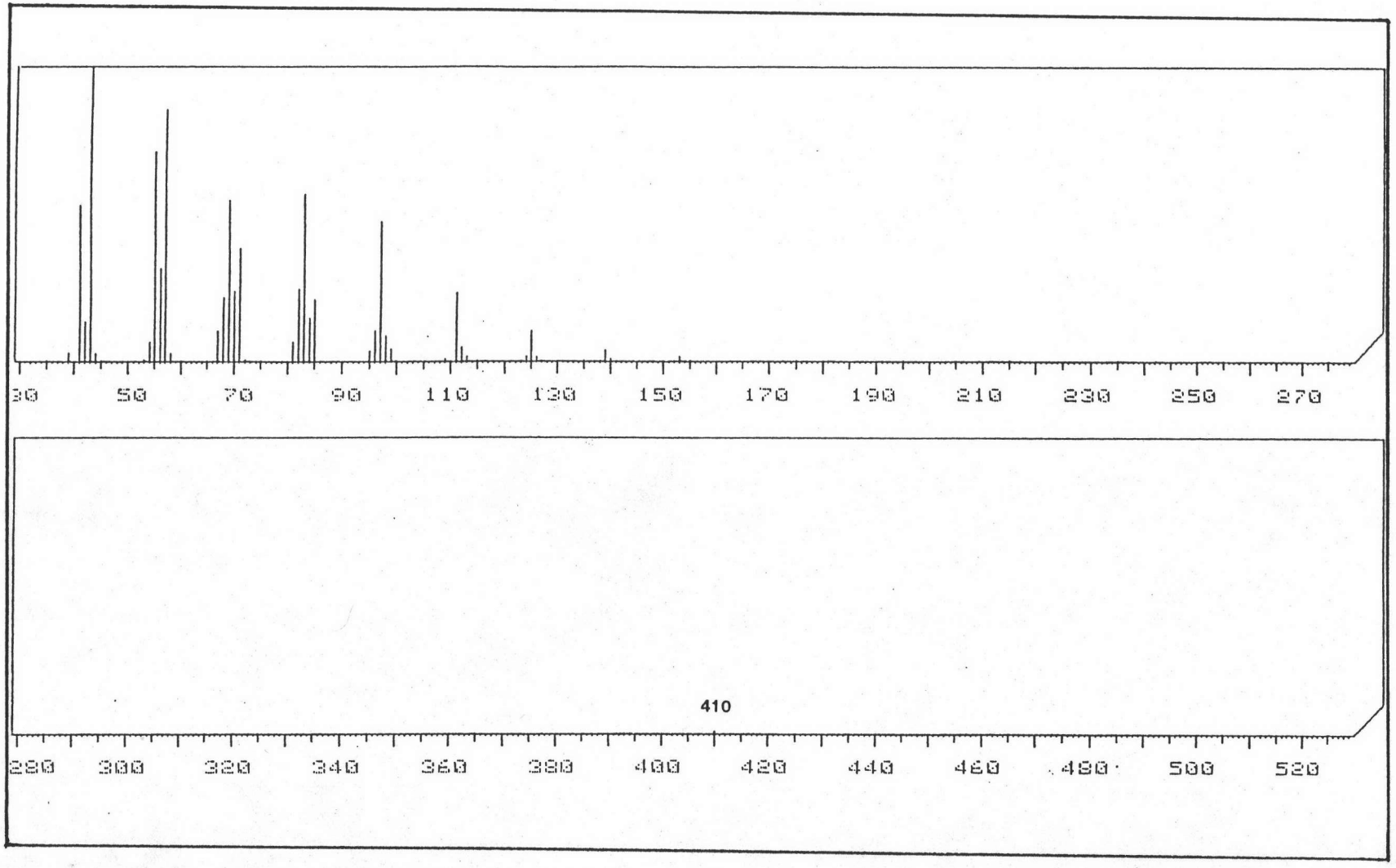

Figure 7 The mass spectrum of Peak 5 of GC-MS analysis of Precipitate I and II

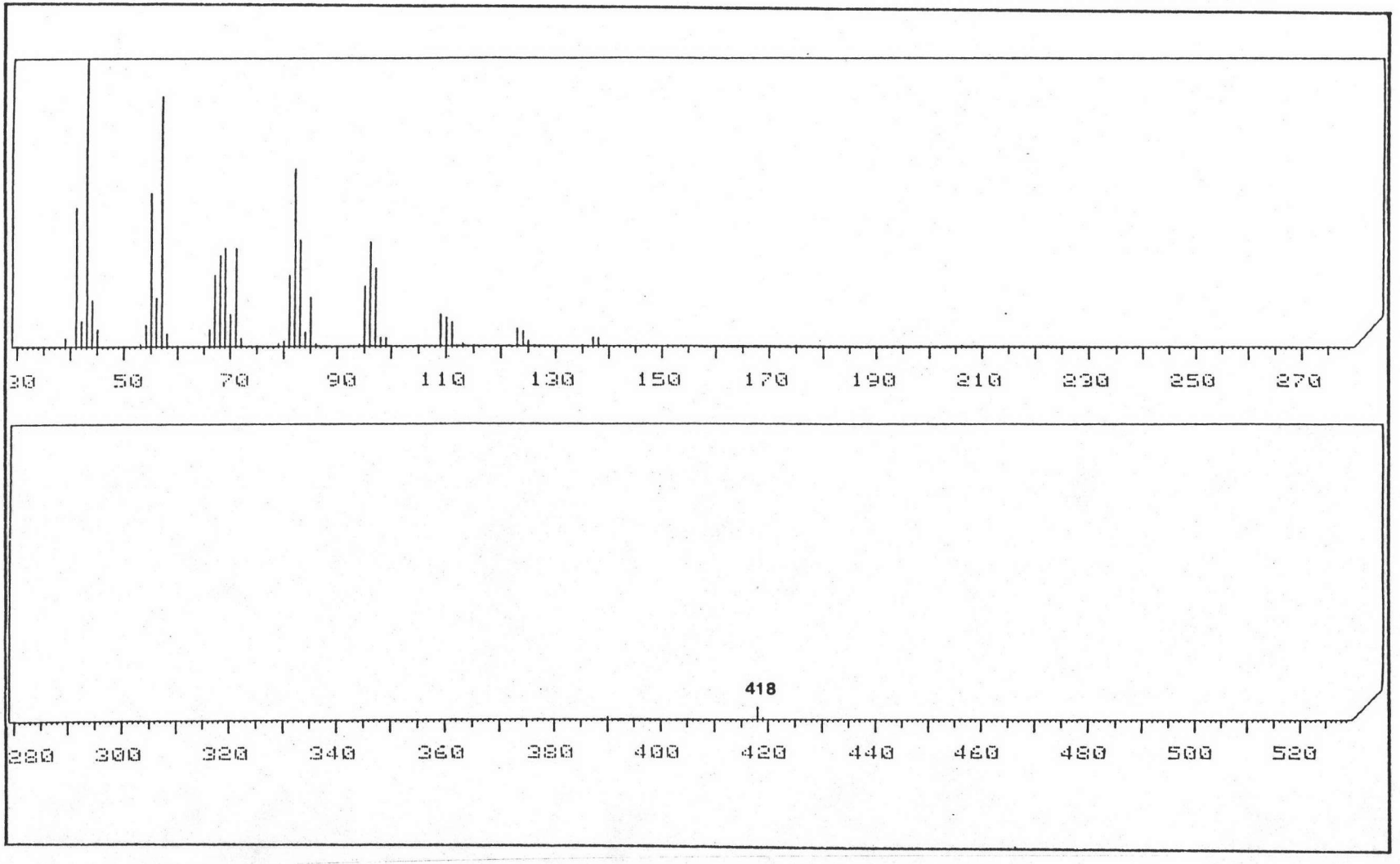

Figure 8 The mass spectrum of Peak 6 of GC-MS analysis of Precipitate I and II

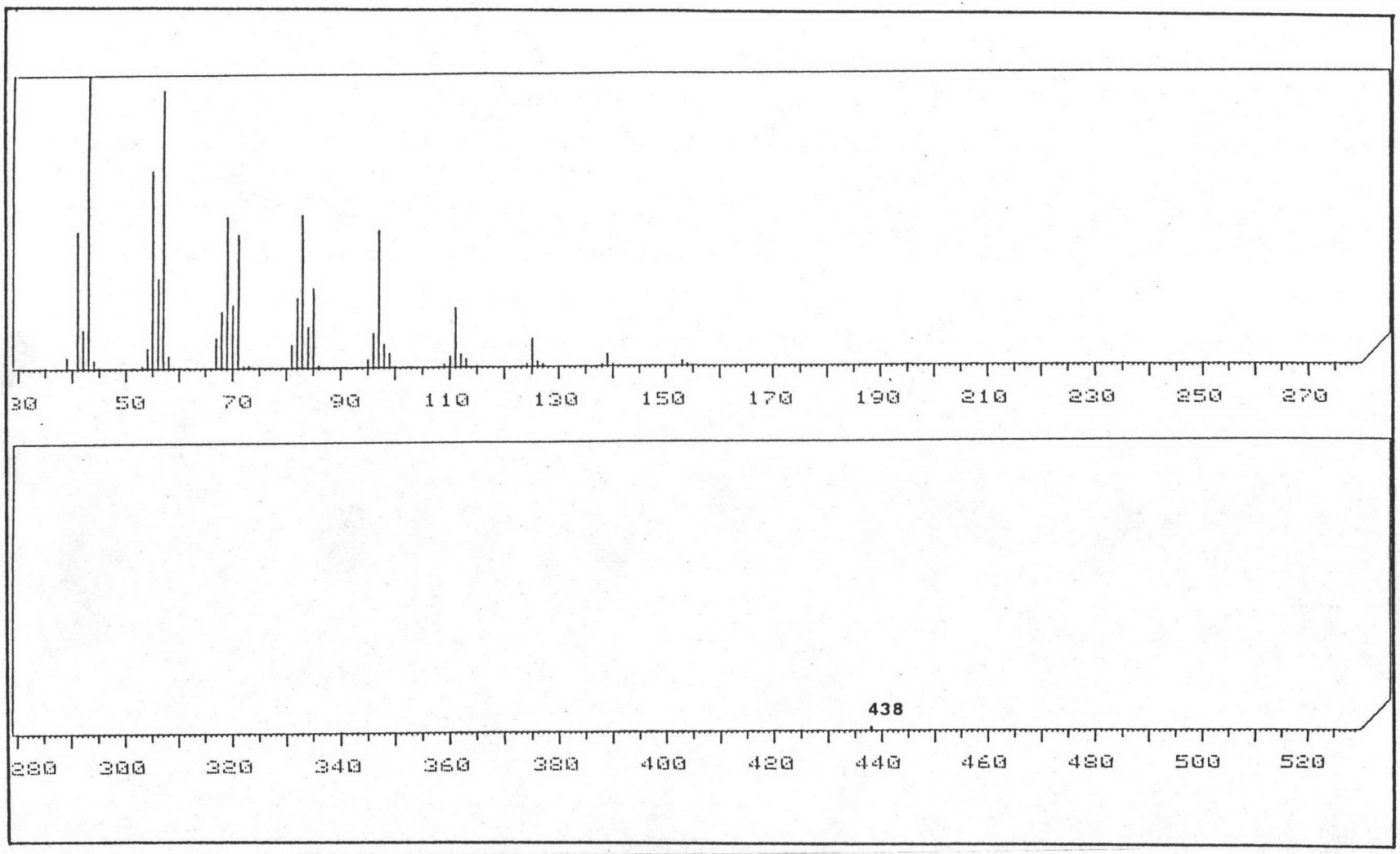

Figure 9 The mass spectrum of Peak 7 of GC-MS analysis of Precipitate I and II

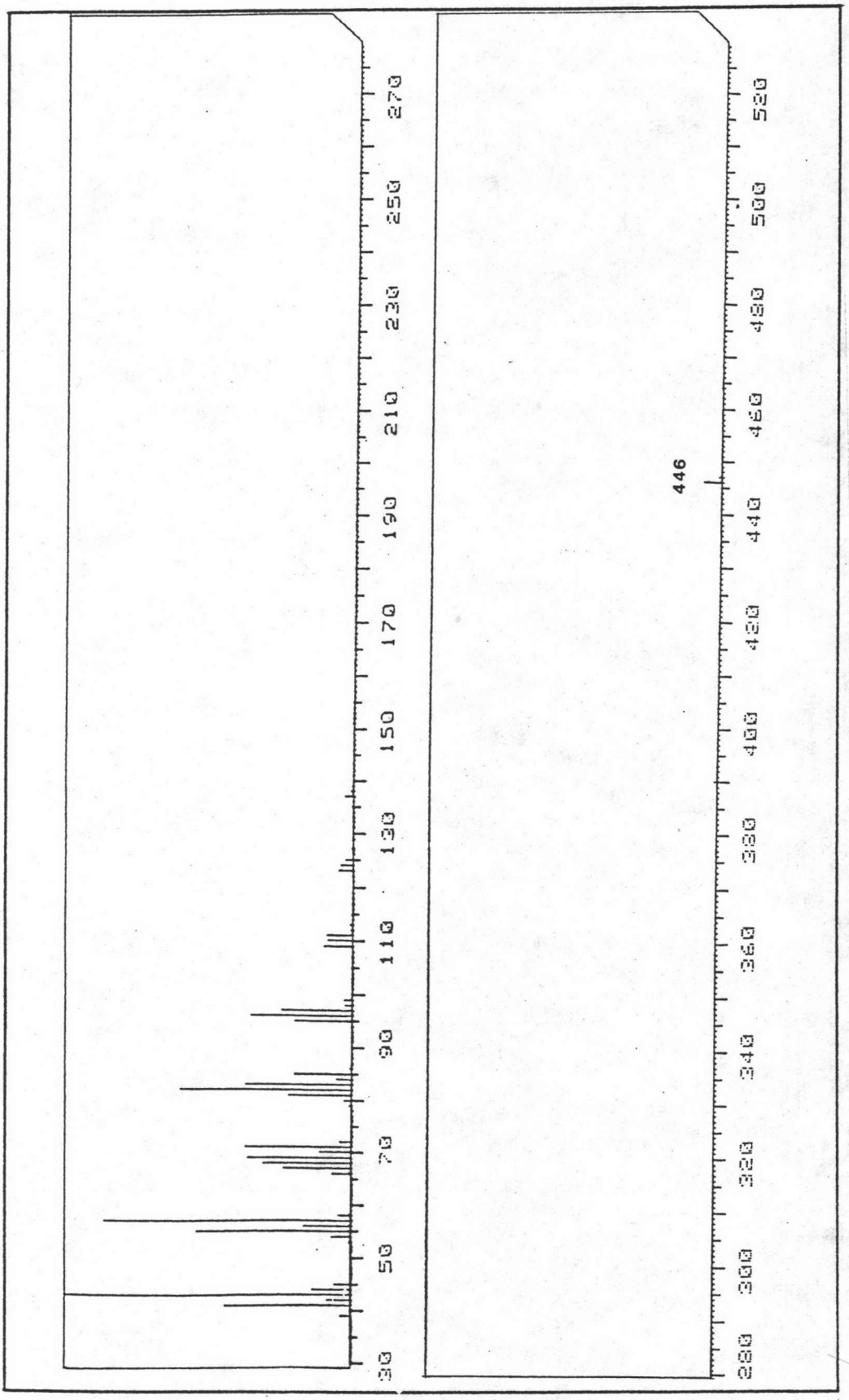

Figure 10 The mass spectrum of Peak 8 of GC-MS analysis of Precipitate I and II

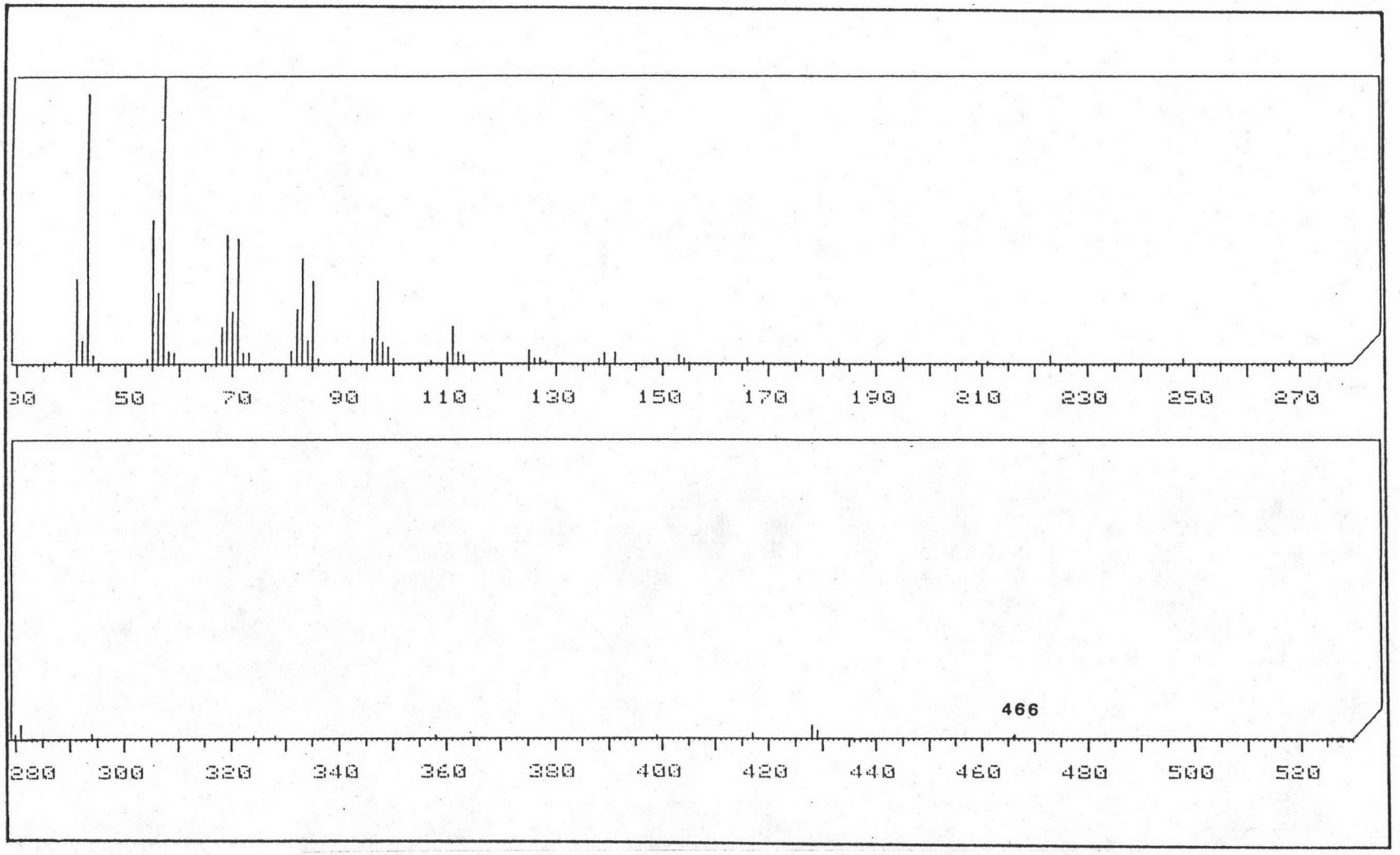

Figure 11 The mass spectrum of Peak 9 of GC-MS analysis of Precipitate I and II

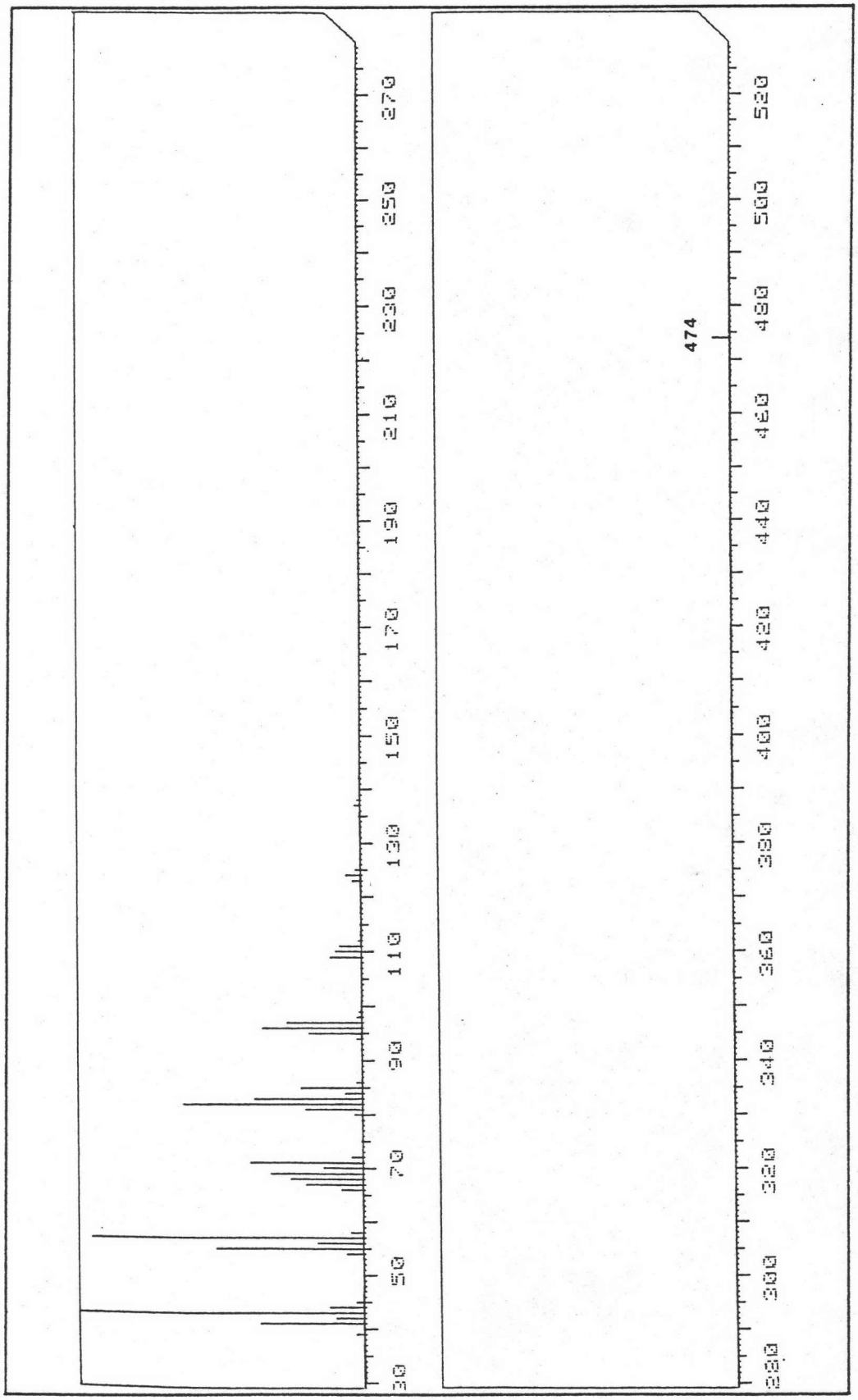

Figure 12 The mass spectrum of Peak 10 of GC-MS analysis of Precipitate I and II

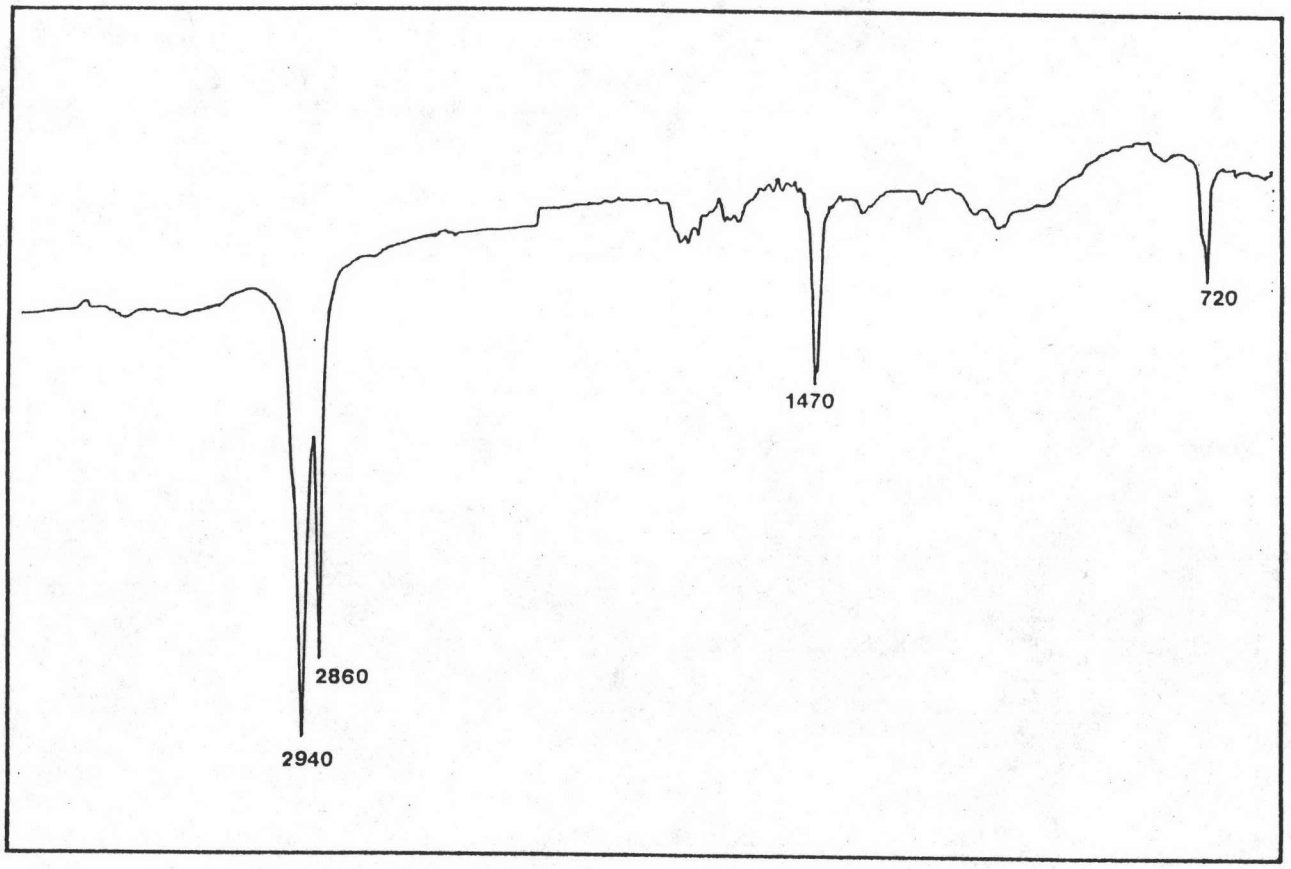

Figure 13 The IR spectrum of Substance 1

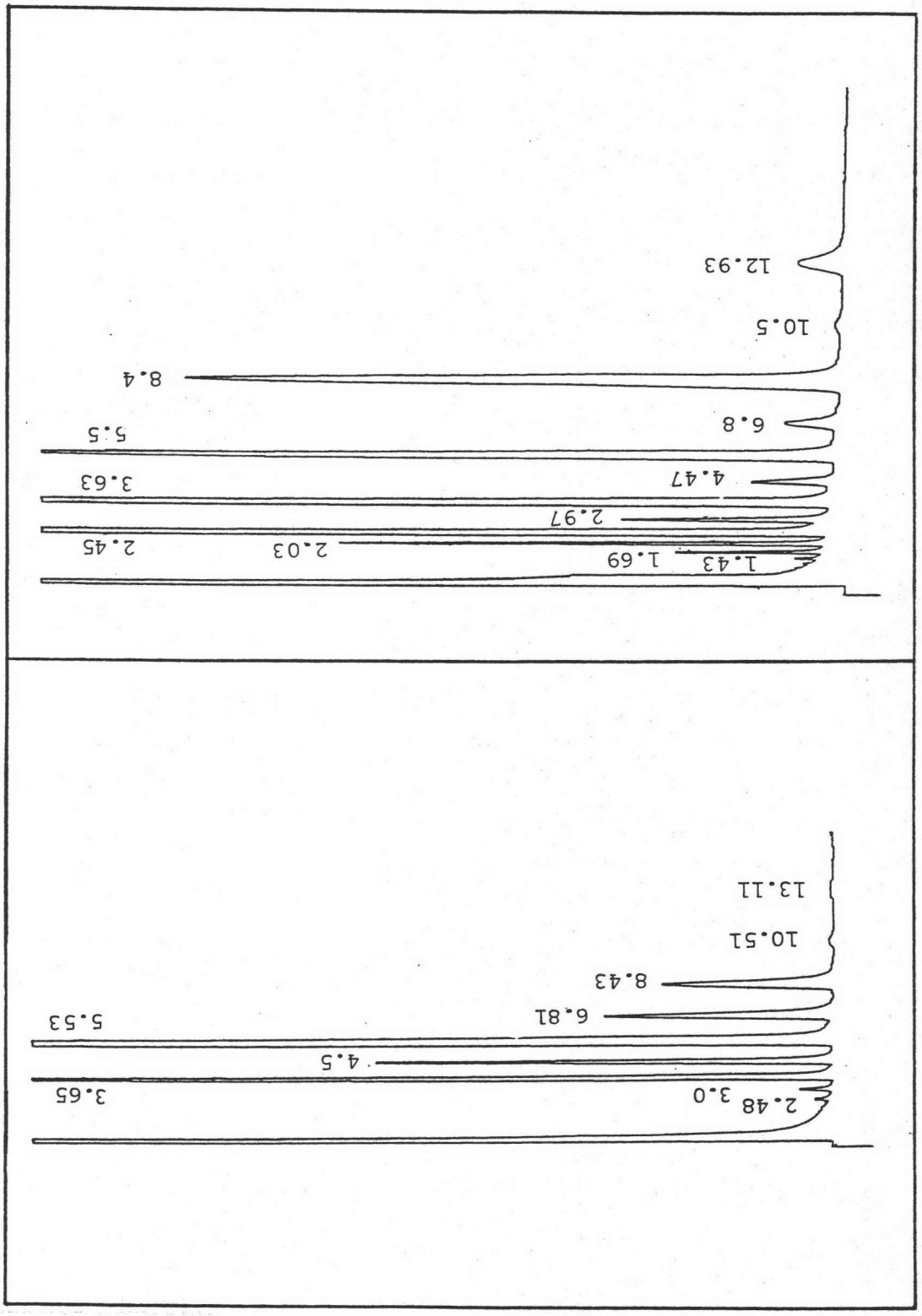

Figure 14 The GC analysis results of Substance 1 from
a) Std. hydrocarbons ($C_{27}H_{56}$-$C_{33}H_{68}$) b) Q83 variety

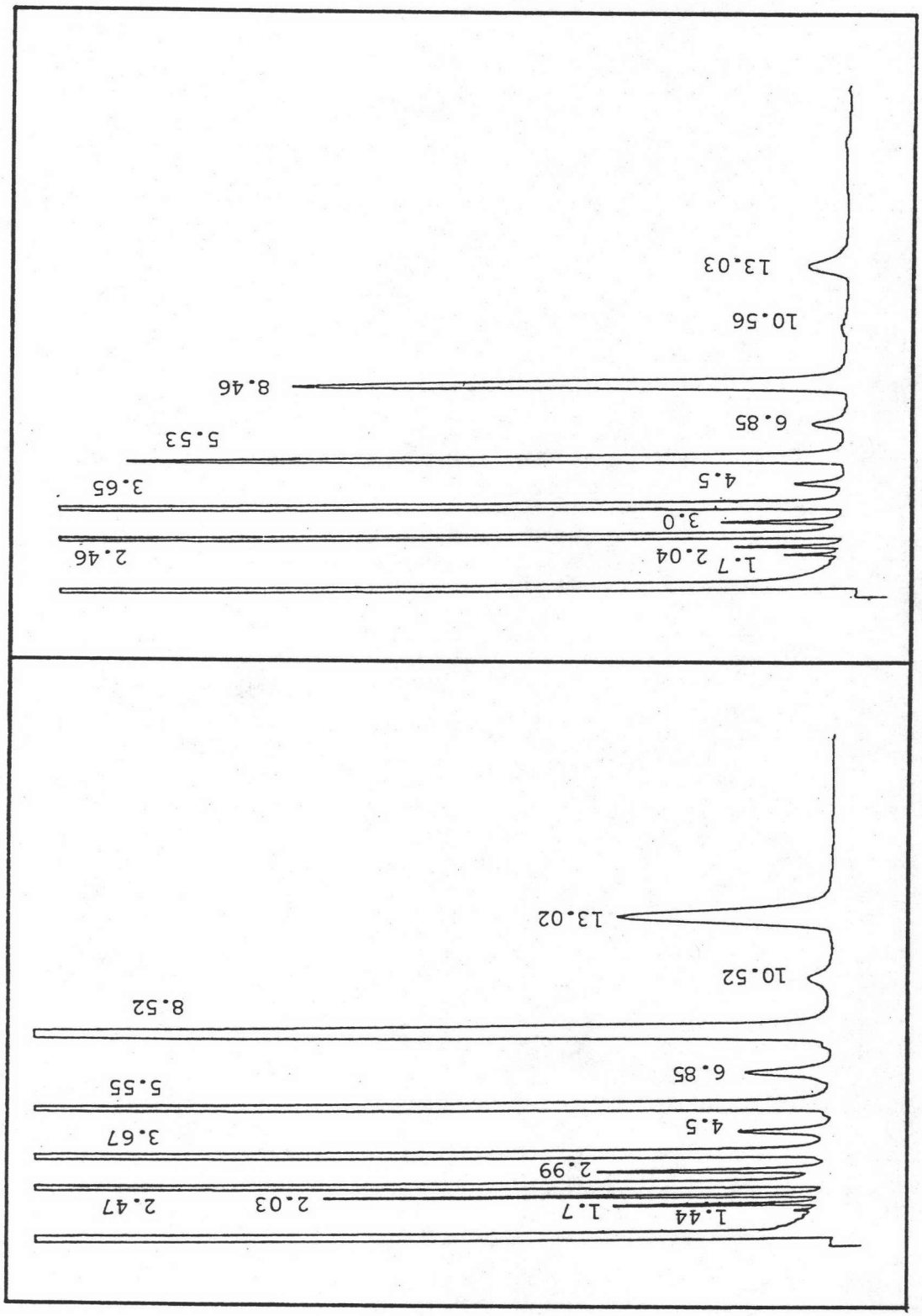

Figure 14 The GC analysis results of Substance 1 from

c) F147 variety d) F153 variety

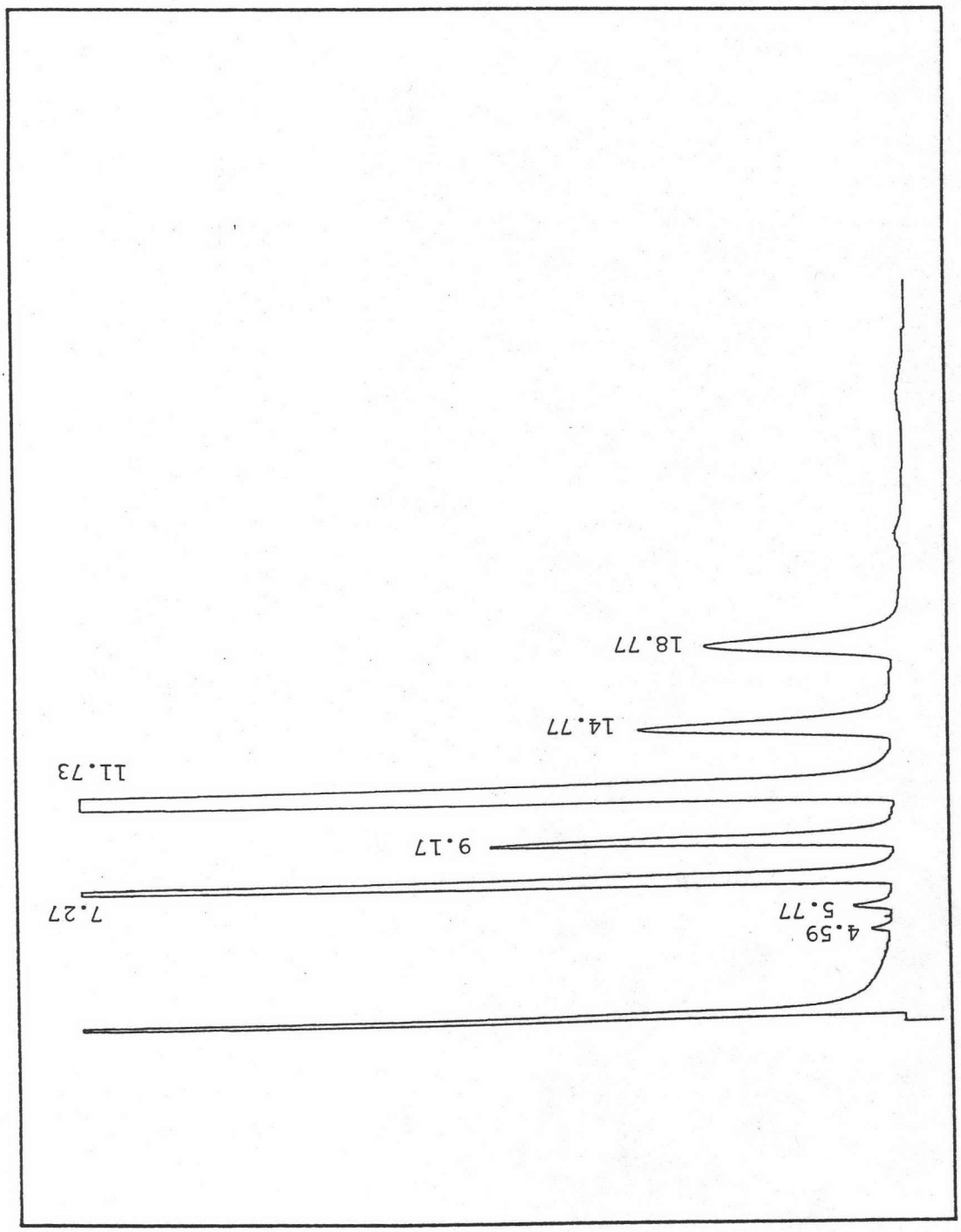

Figure 15a The GC analysis results of Std. hydrocarbons

Figure 15 The GC analysis results of Substance 1 from b) Mitr Phol Factory c) Mitr Siam Factory

Figure 15 The GC analysis results of Substance 1 from

d) Khumphawapi Factory e) United Farmer&Industry Factory

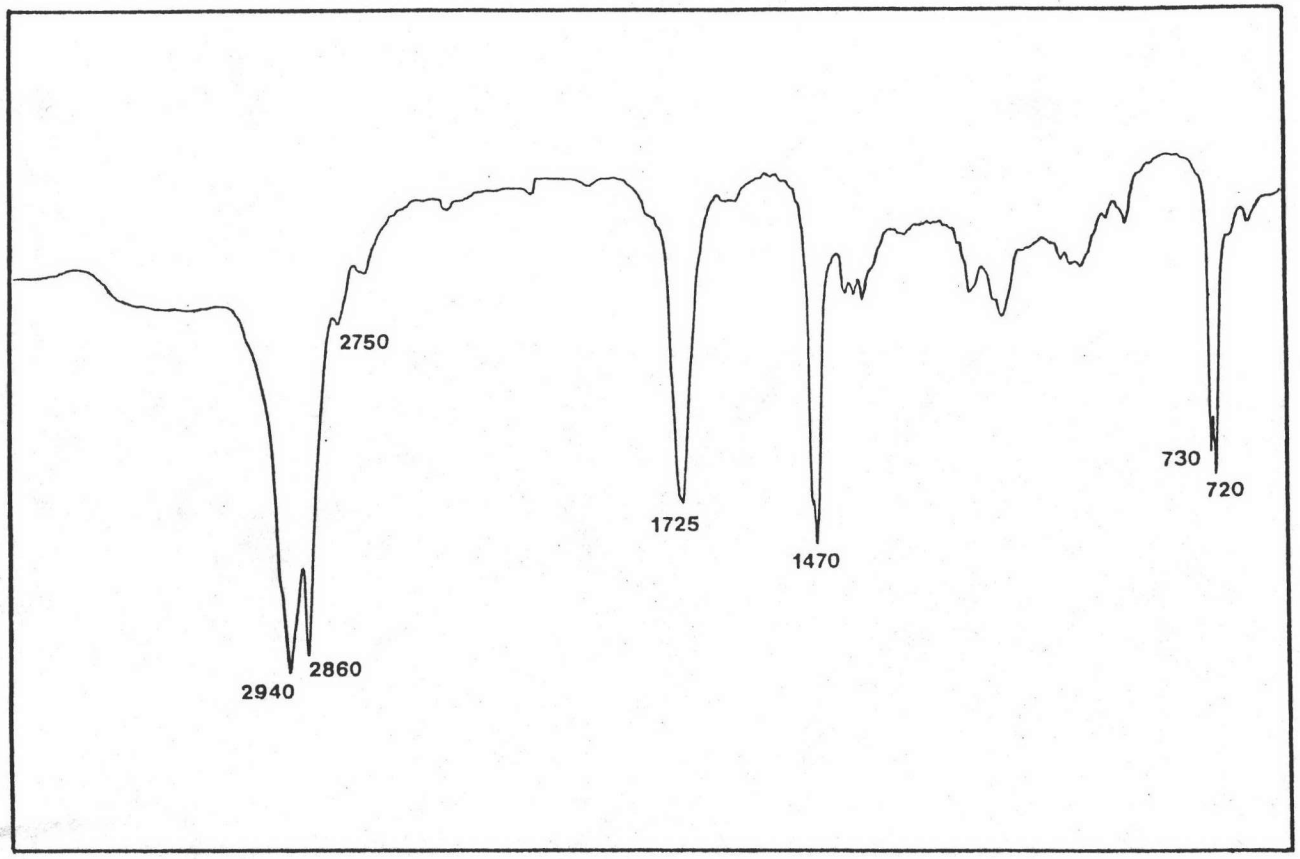

Figure 16 The IR spectrum of Substance 2

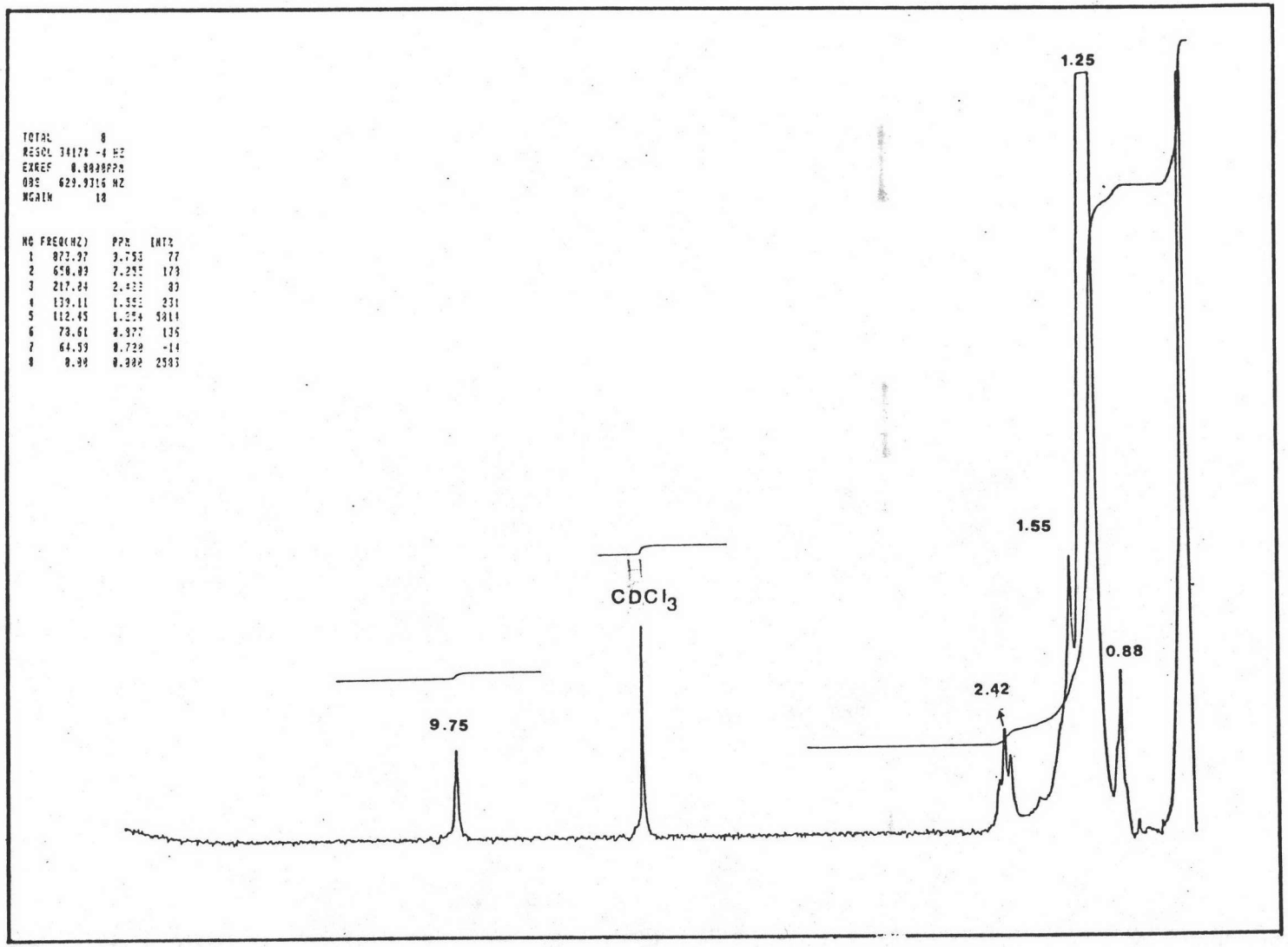

Figure 17 The ^{1}H NMR spectrum of Substance 2

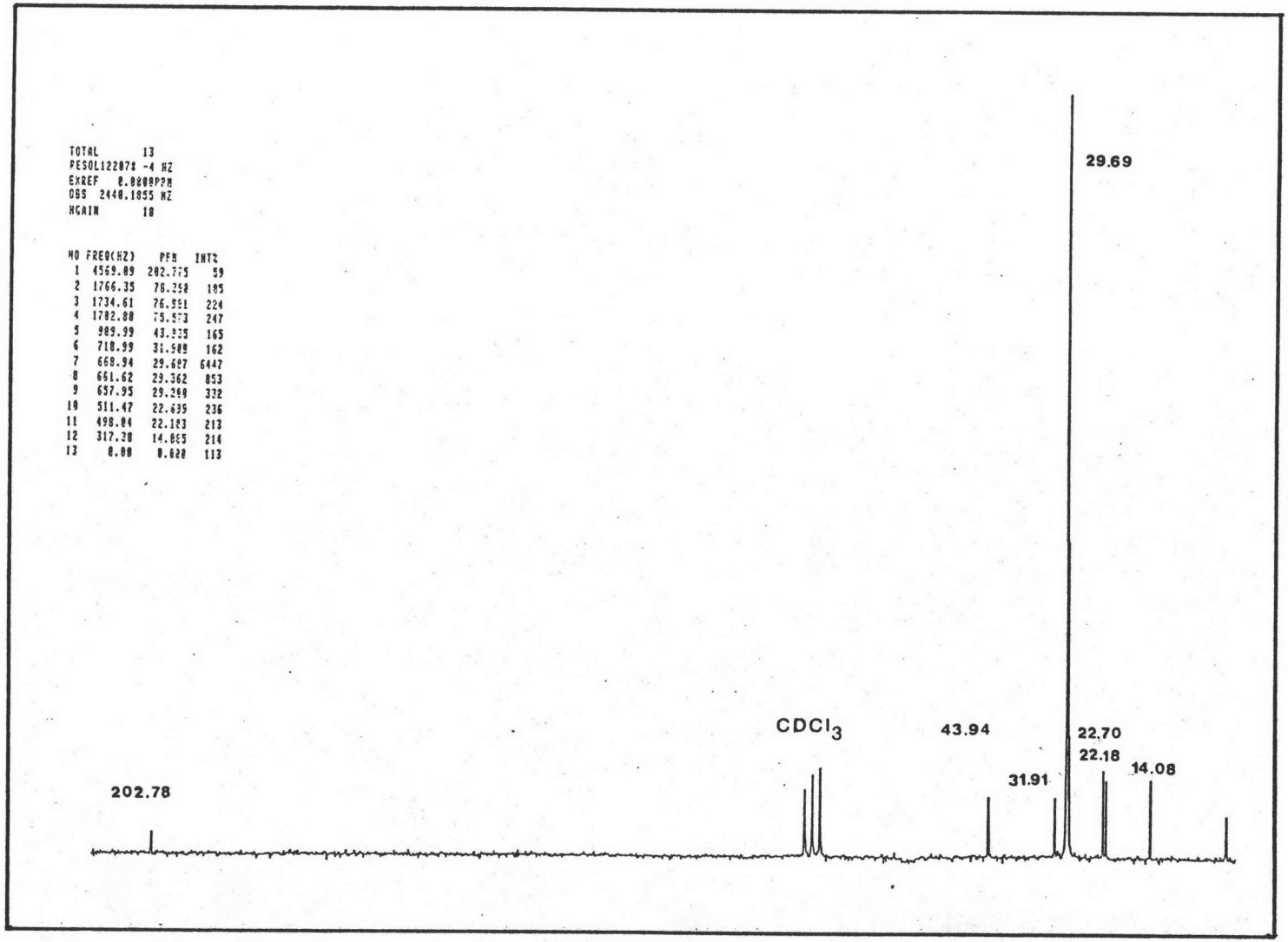

Figure 18 The ^{13}C NMR spectrum of Substance 2

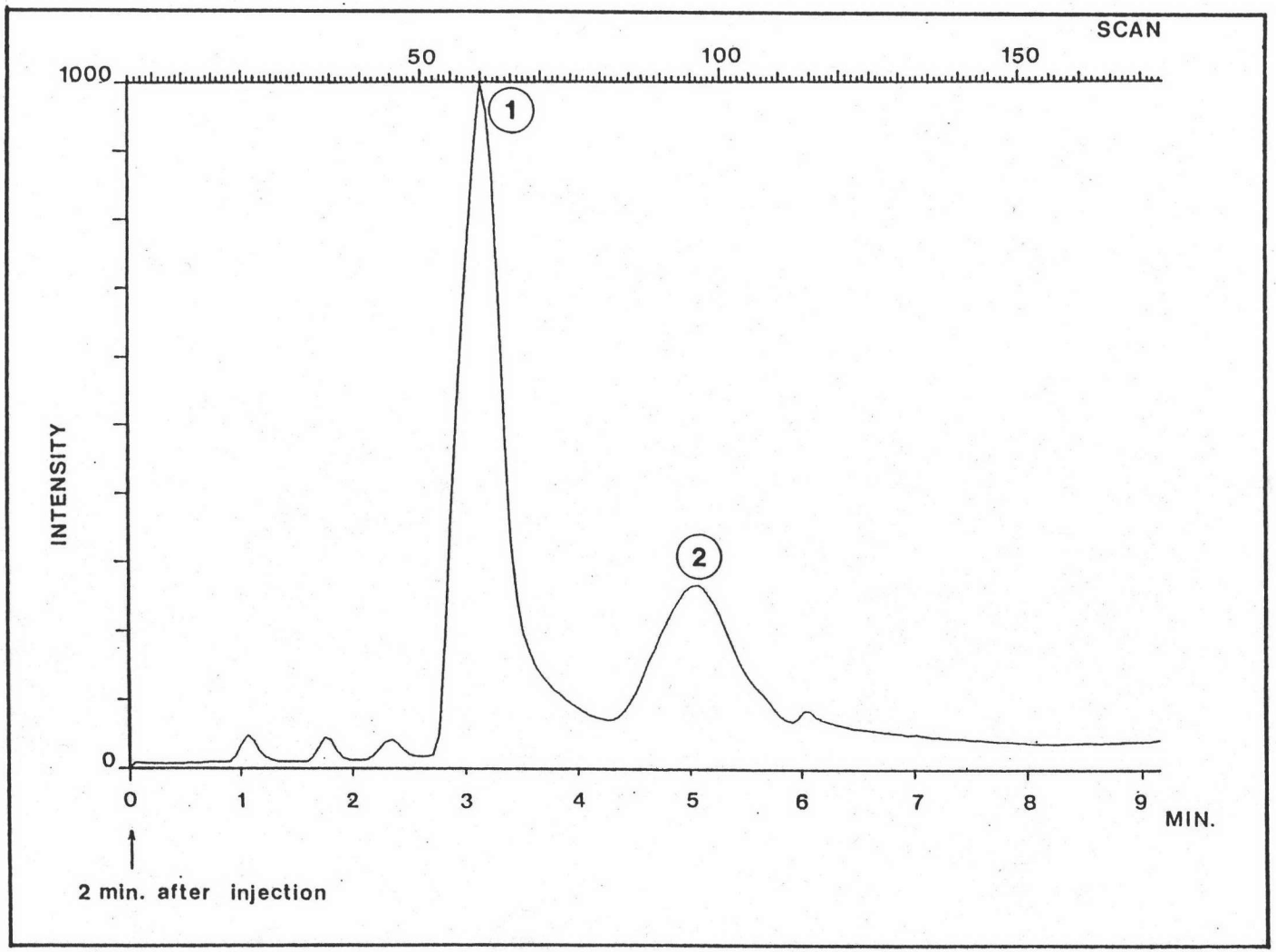

Figure 19 The gas chromatogram of GC-MS analysis of Substance 2 from rind of F153 variety

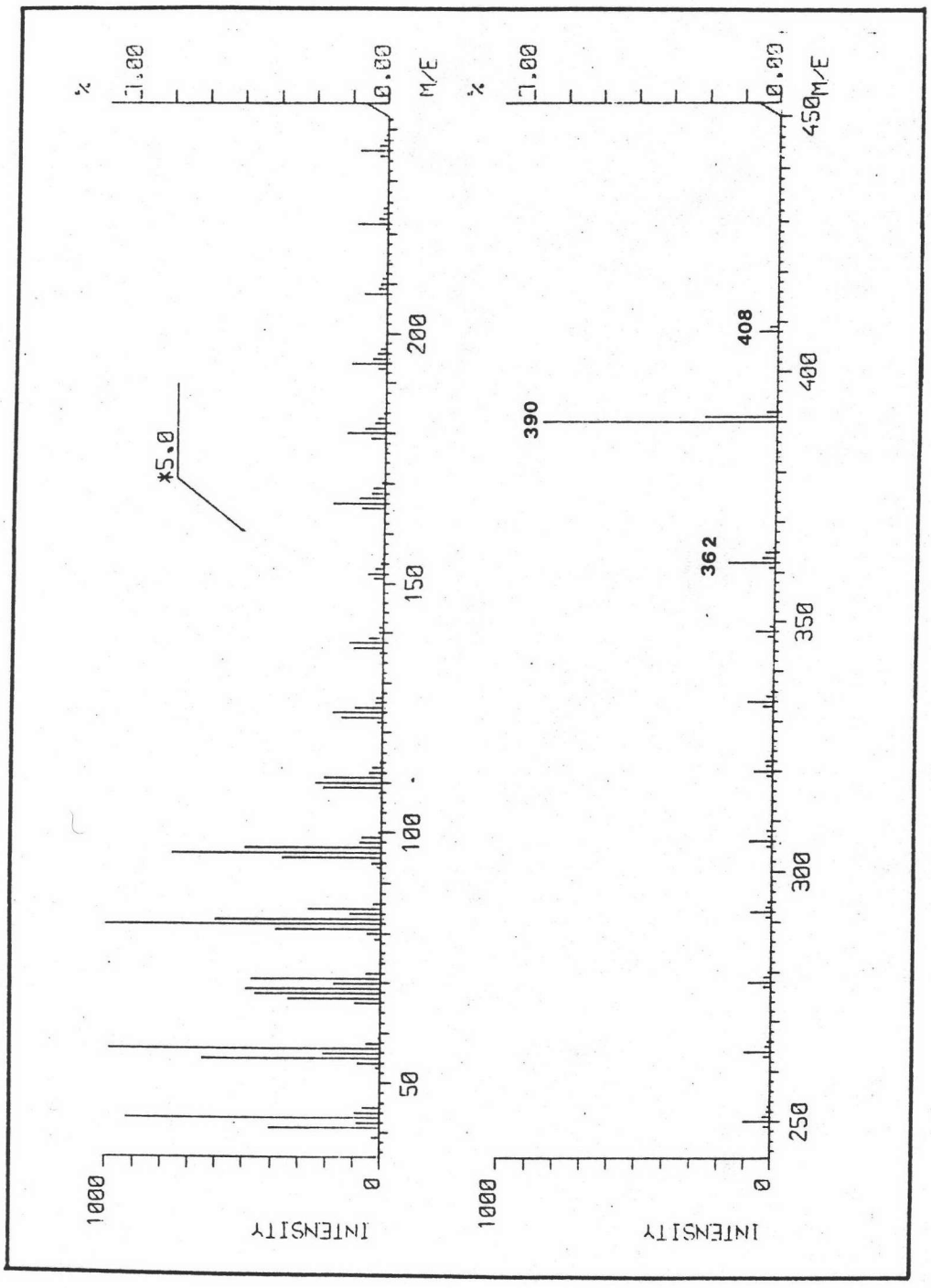

Figure 20 The mass spectrum of Peak 1 of GC-MS analysis of Substance 2

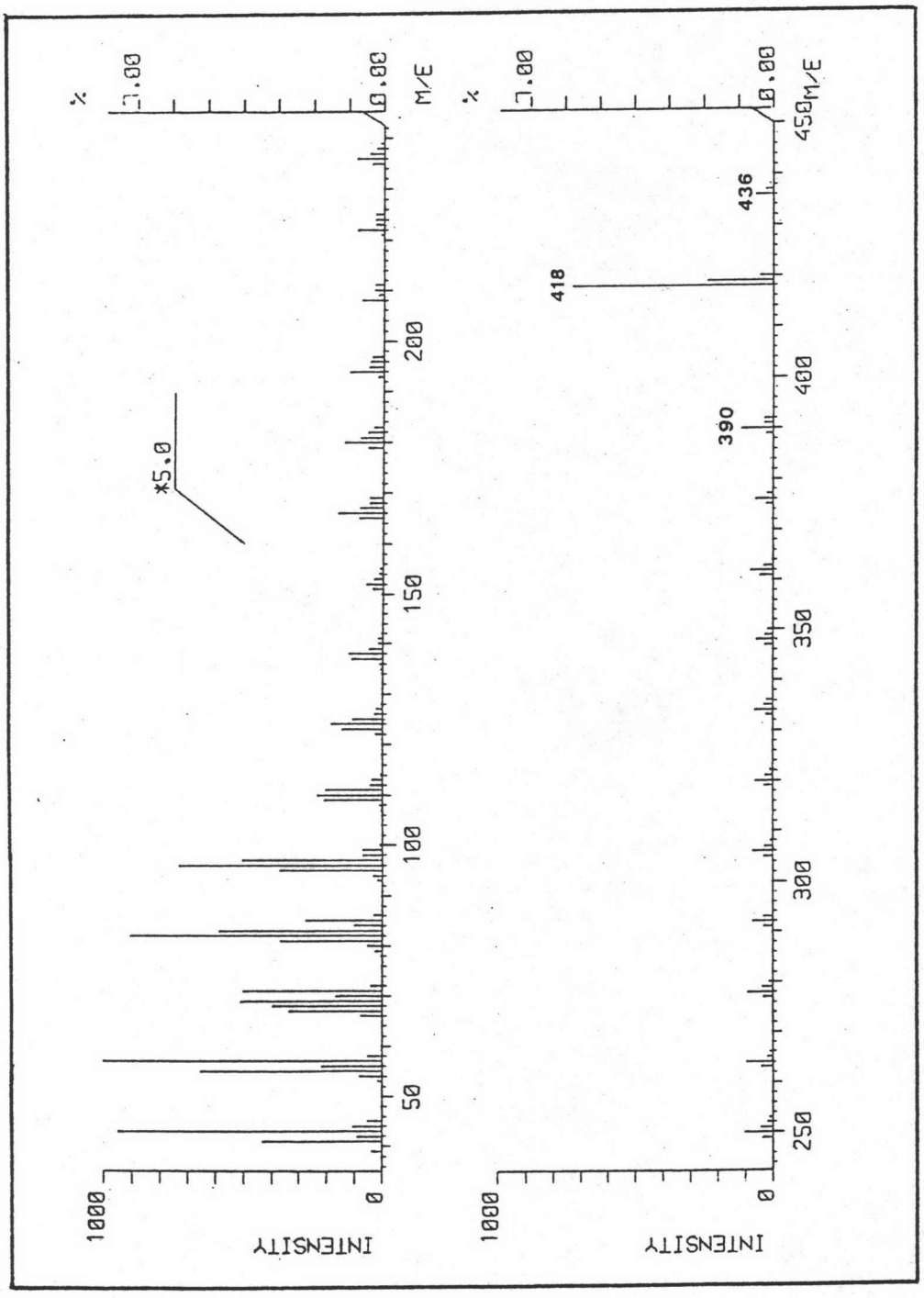

Figure 21 The mass spectrum of Peak 2 of GC-MS analysis of Substance 2

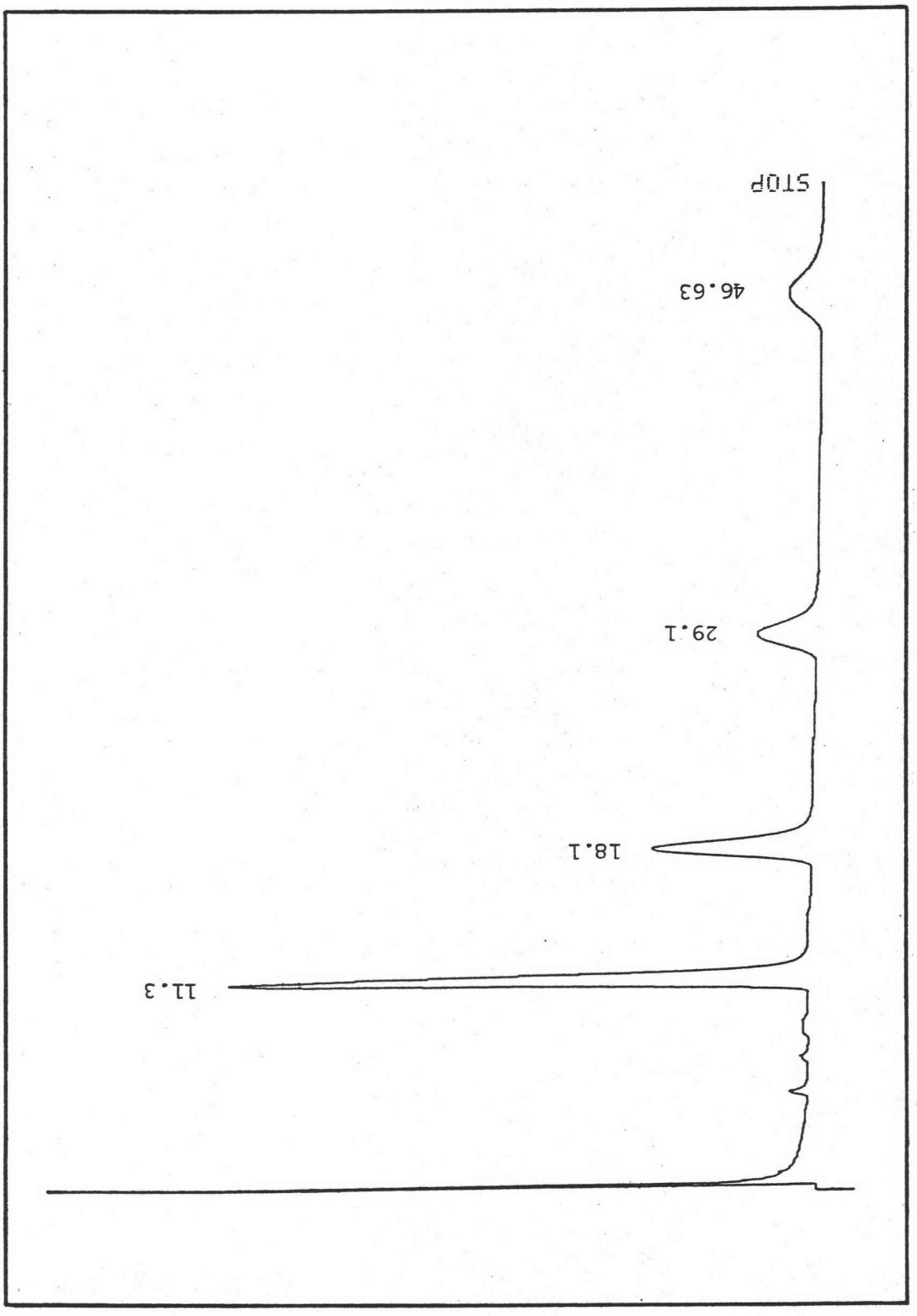

Figure 22a The CG analysis results of std. aldehydes, $C_nH_{2n+1}CHO$, n=27,29,31,33 (for sugar cane rinds)

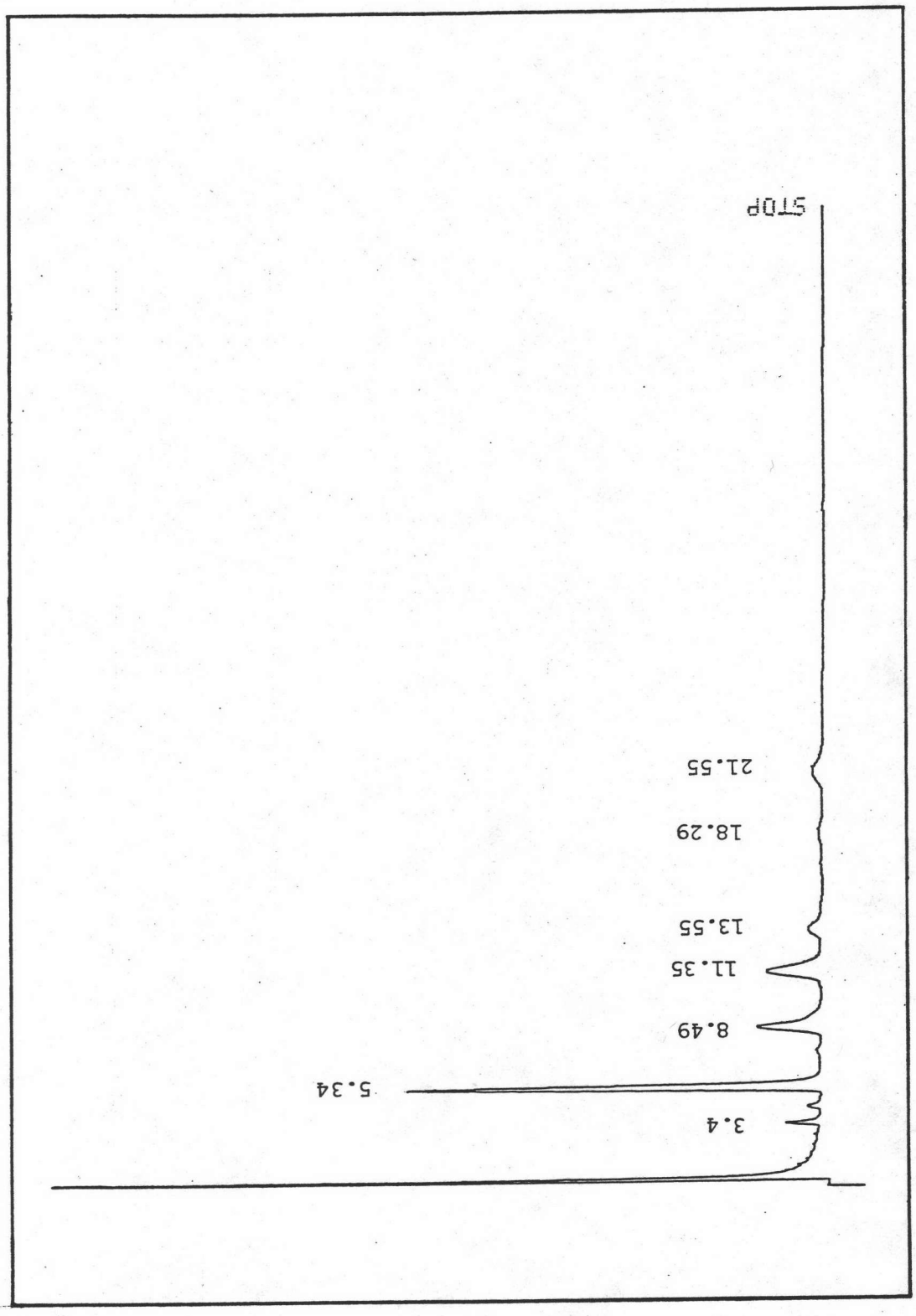

Figure 22b The CG analysis results of Substance 2 from F147 variety

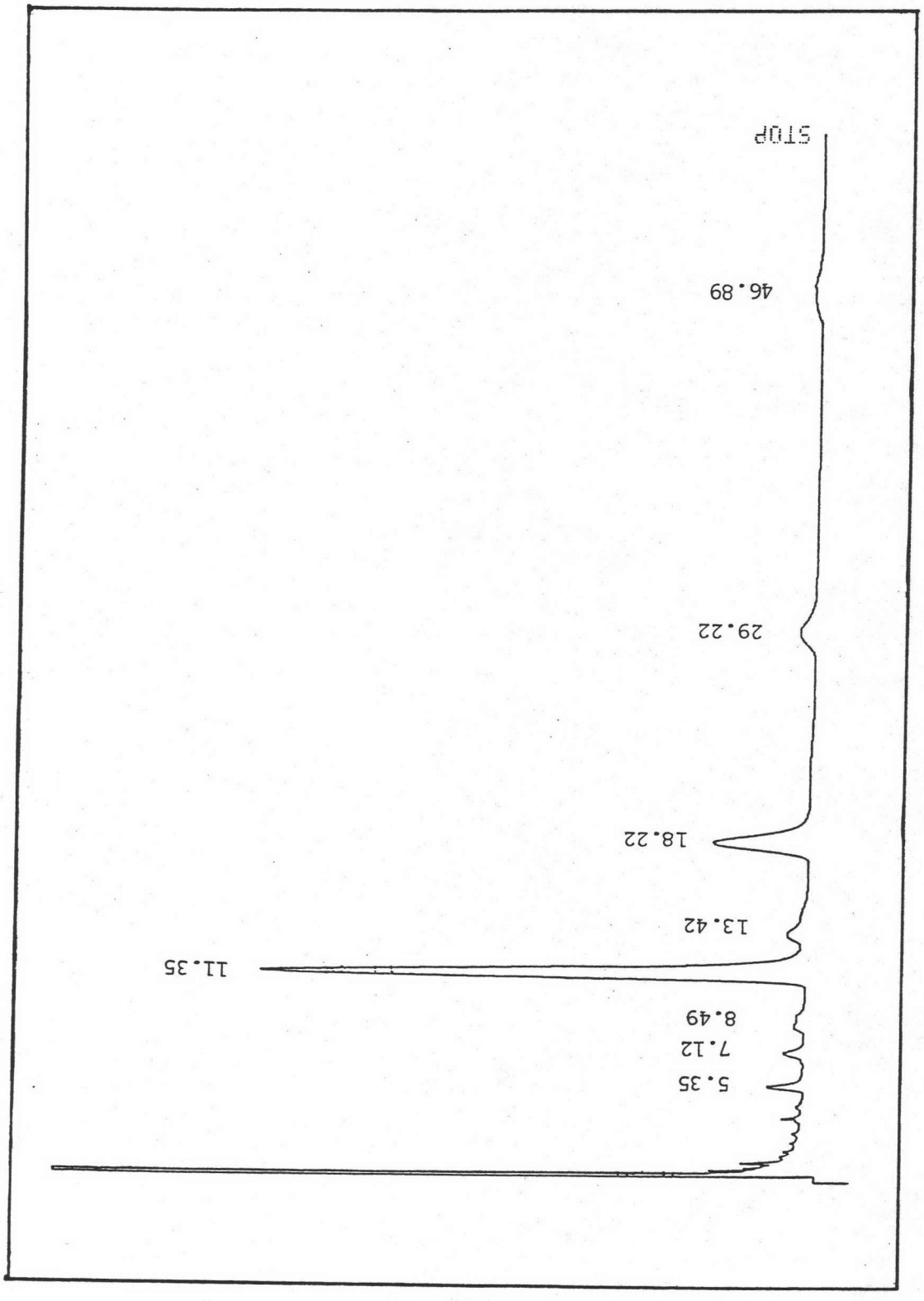

Figure 22c The CG analysis results of Substance 2 from F153 variety

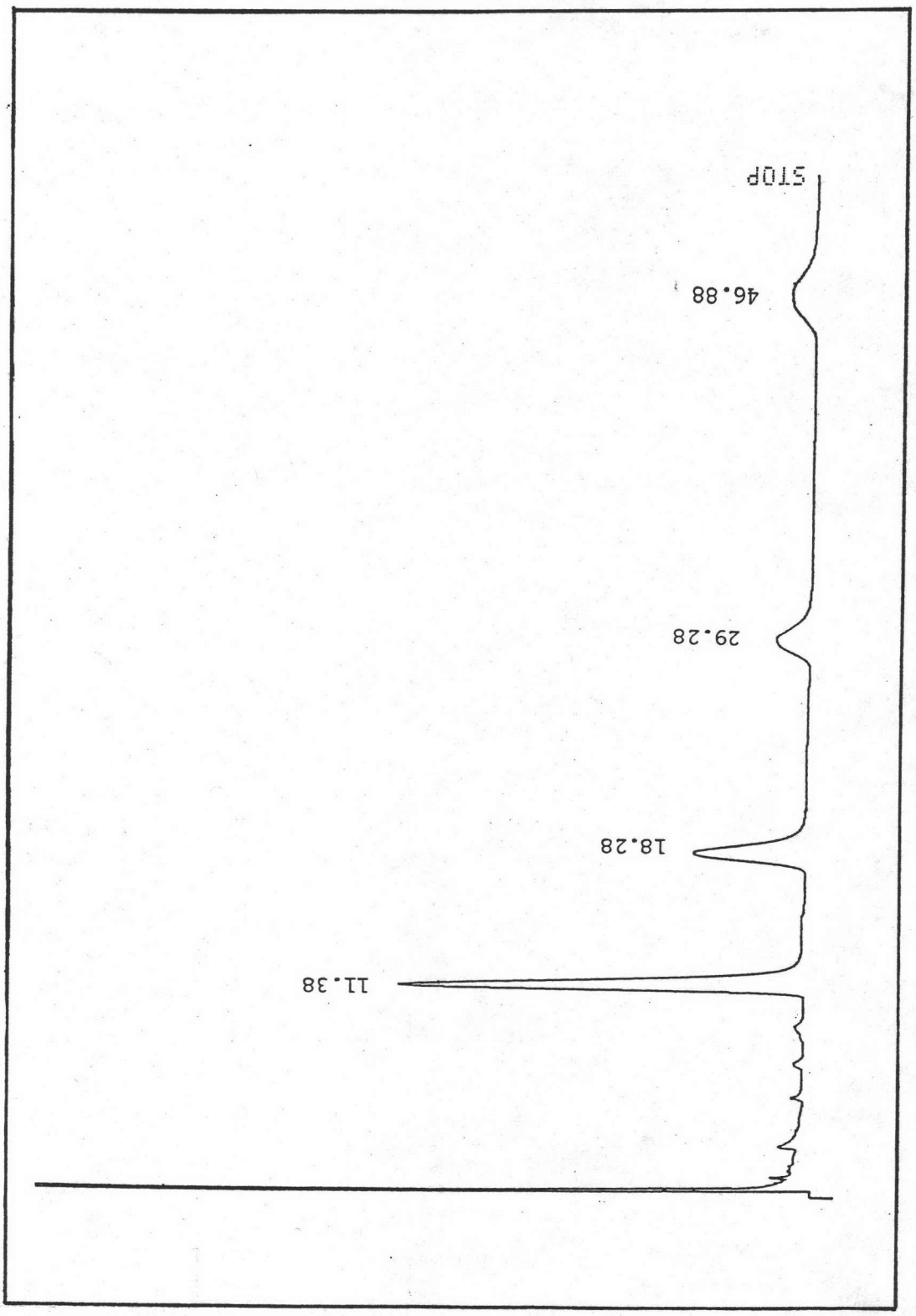

Figure 22d The CG analysis results of Substance 2 from Q83 variety

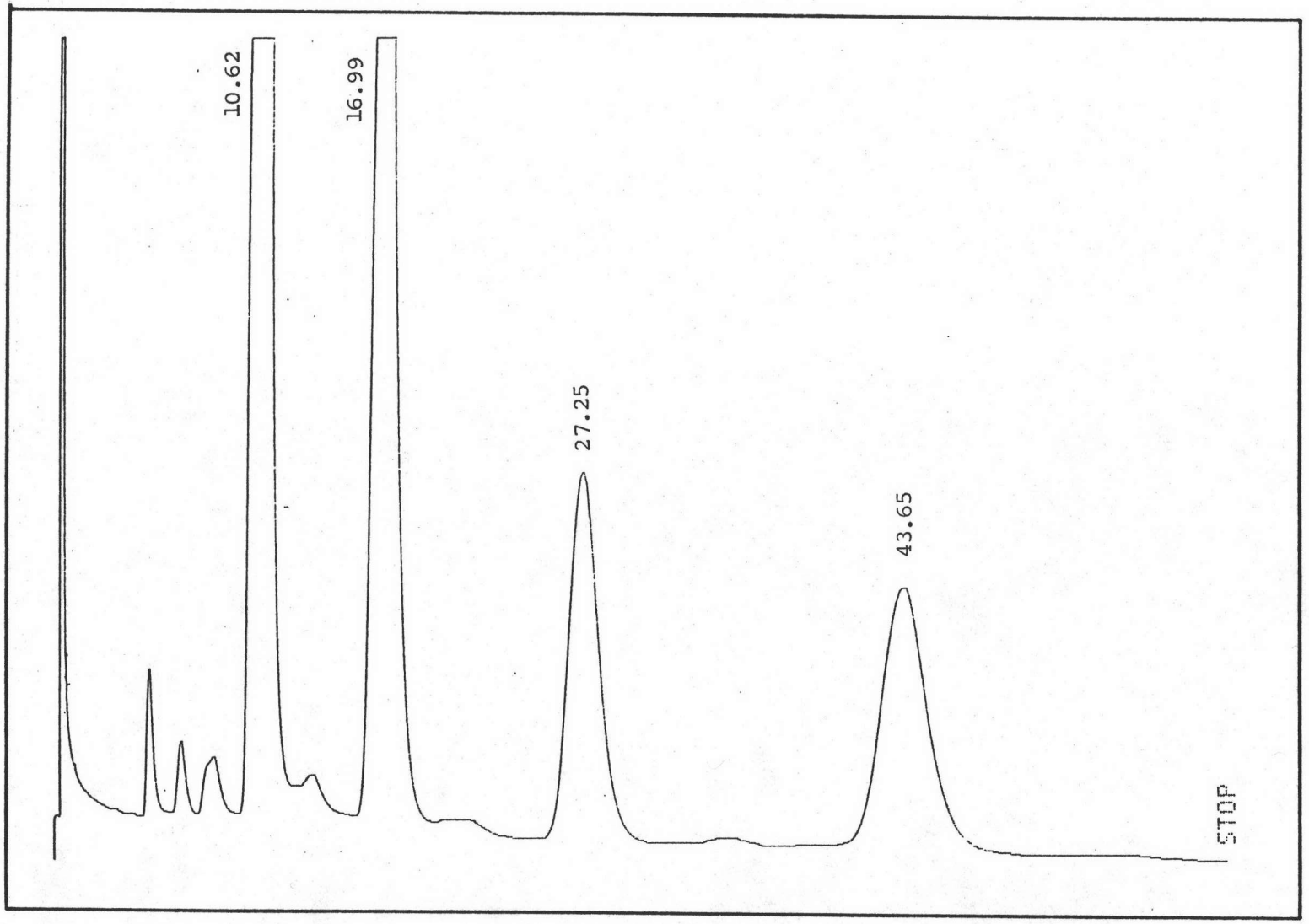

Figure 23a The CG analysis results of std. aldehydes

(for Mitr Phol and Unitd Farmer&Industry Factories)

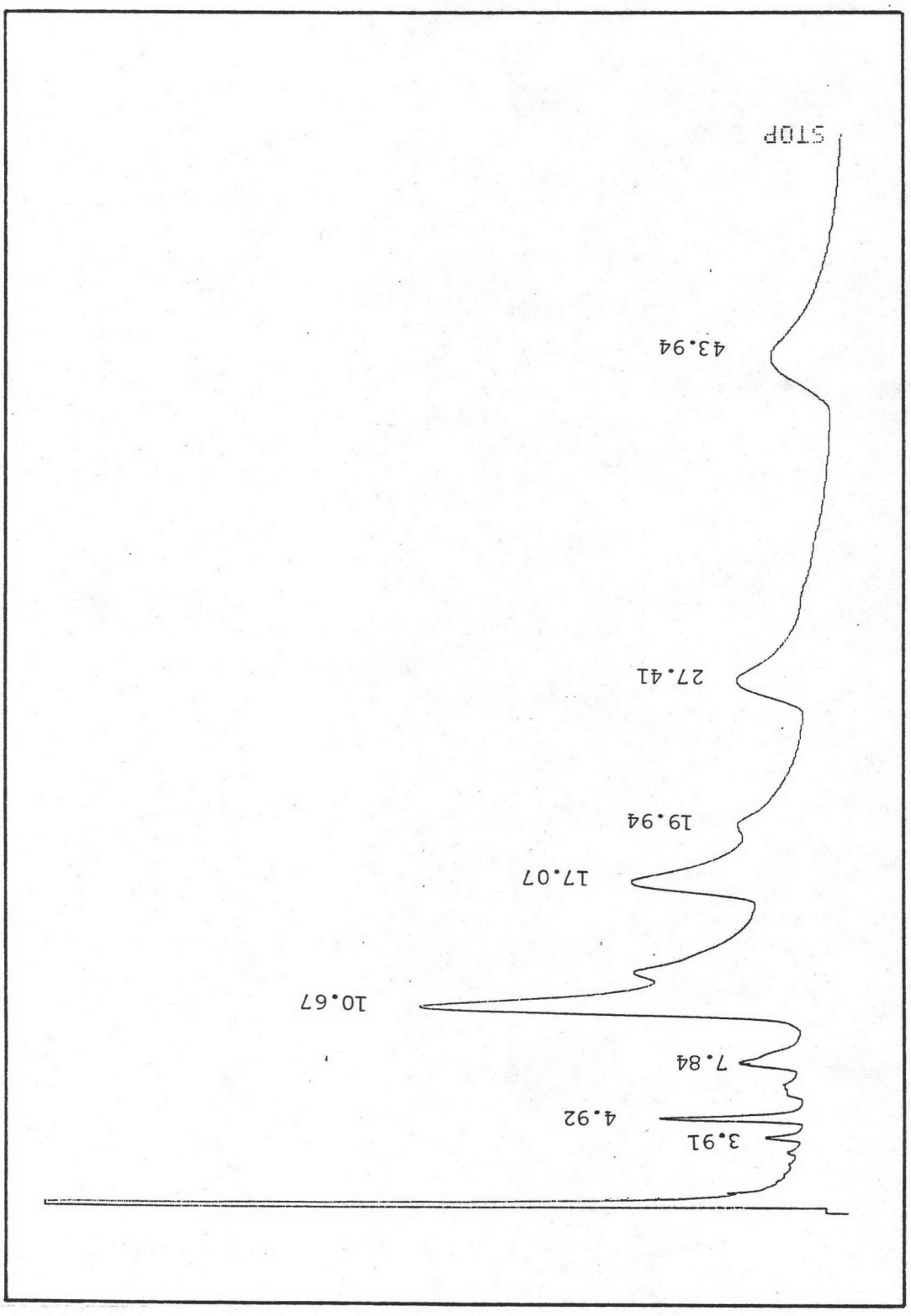

Figure 23b The CG analysis results of Substance 2 from Mitr Phol Factory

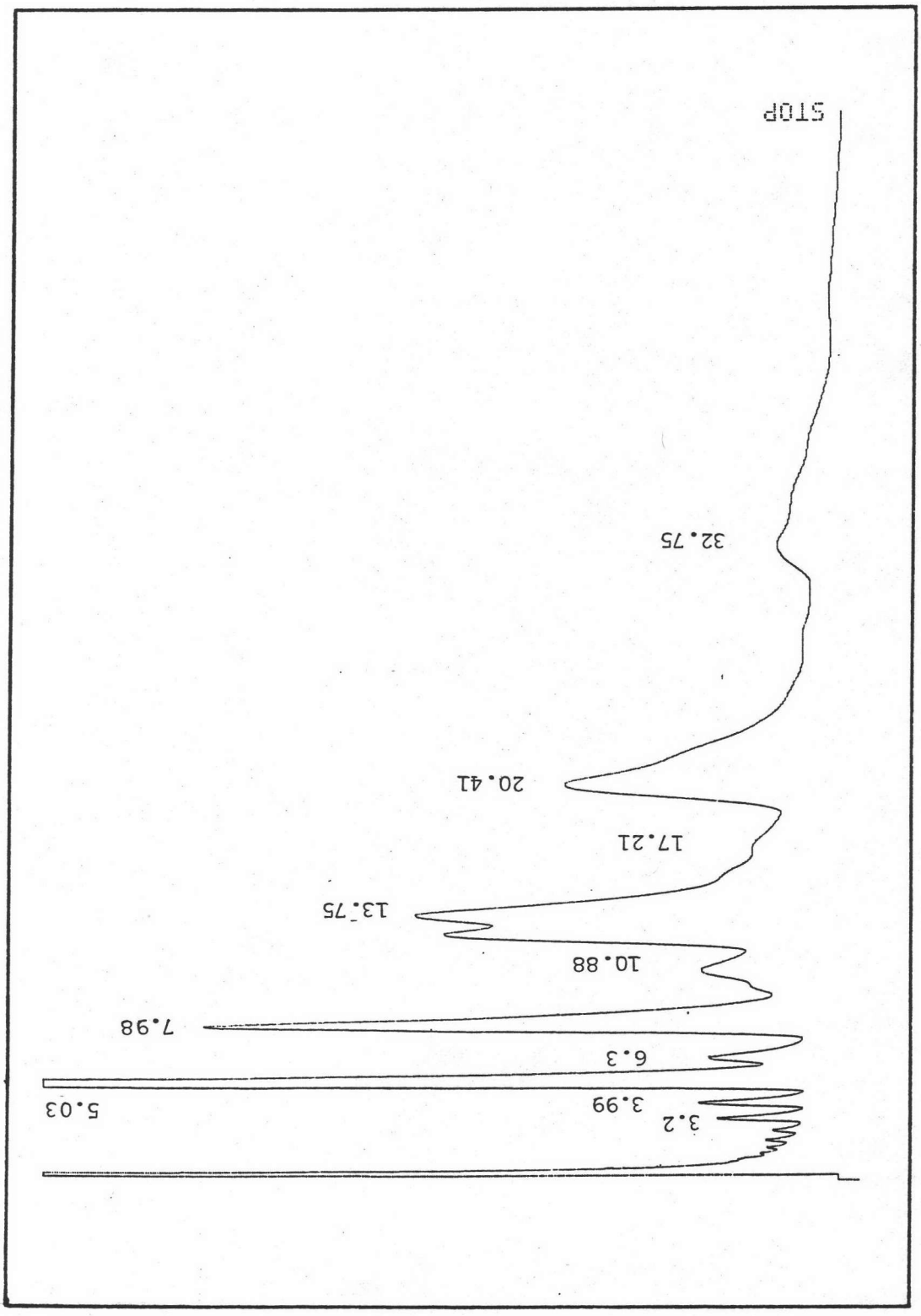

Figure 23c The CG analysis results of Substance 2 from United Farmer&Industry Factory

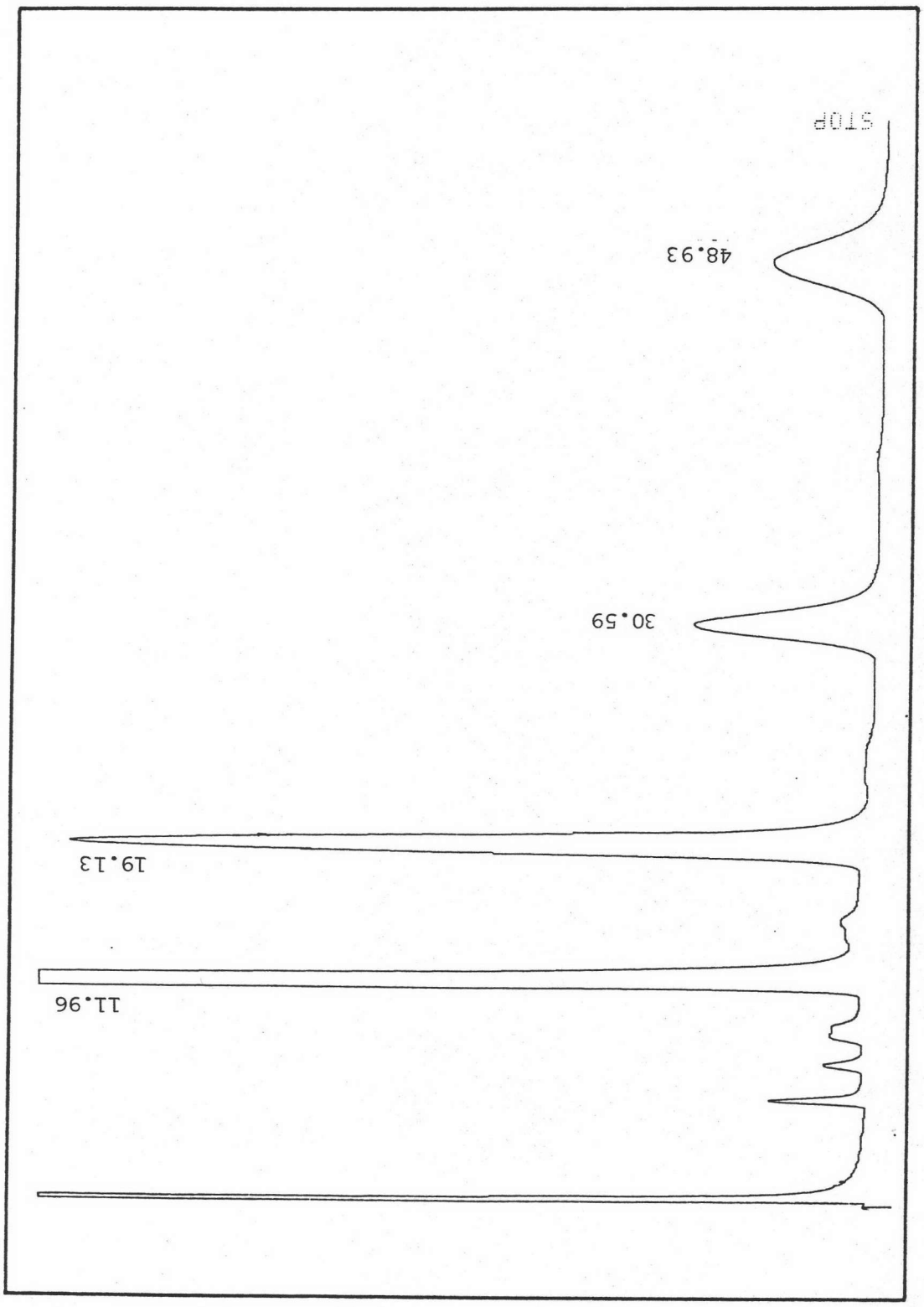

Figure 23d The CG analysis results of std. aldehydes

(for Khumphawapi Factory)

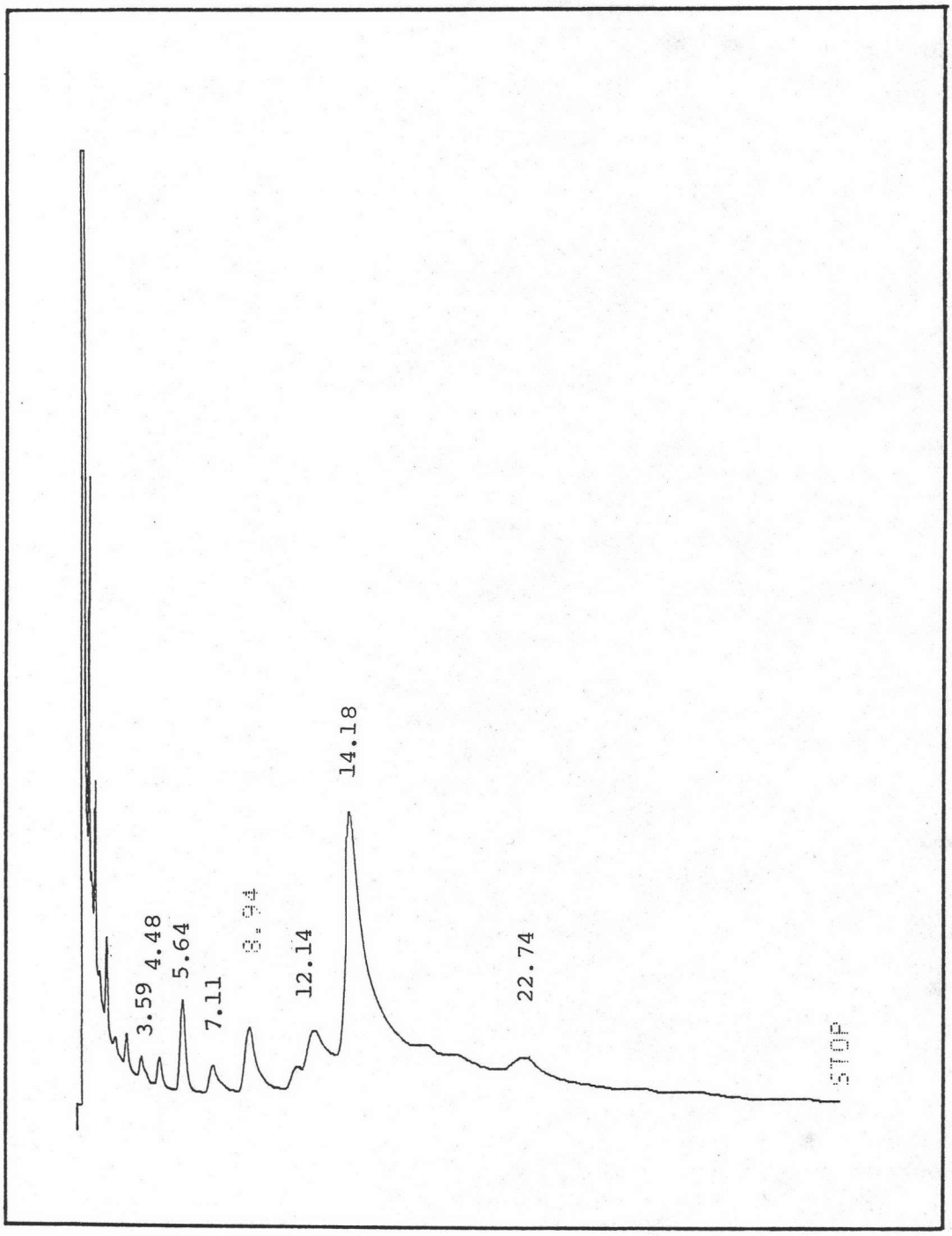

Figure 23e The CG analysis results of Substance 2 from Khumphawapi Factory

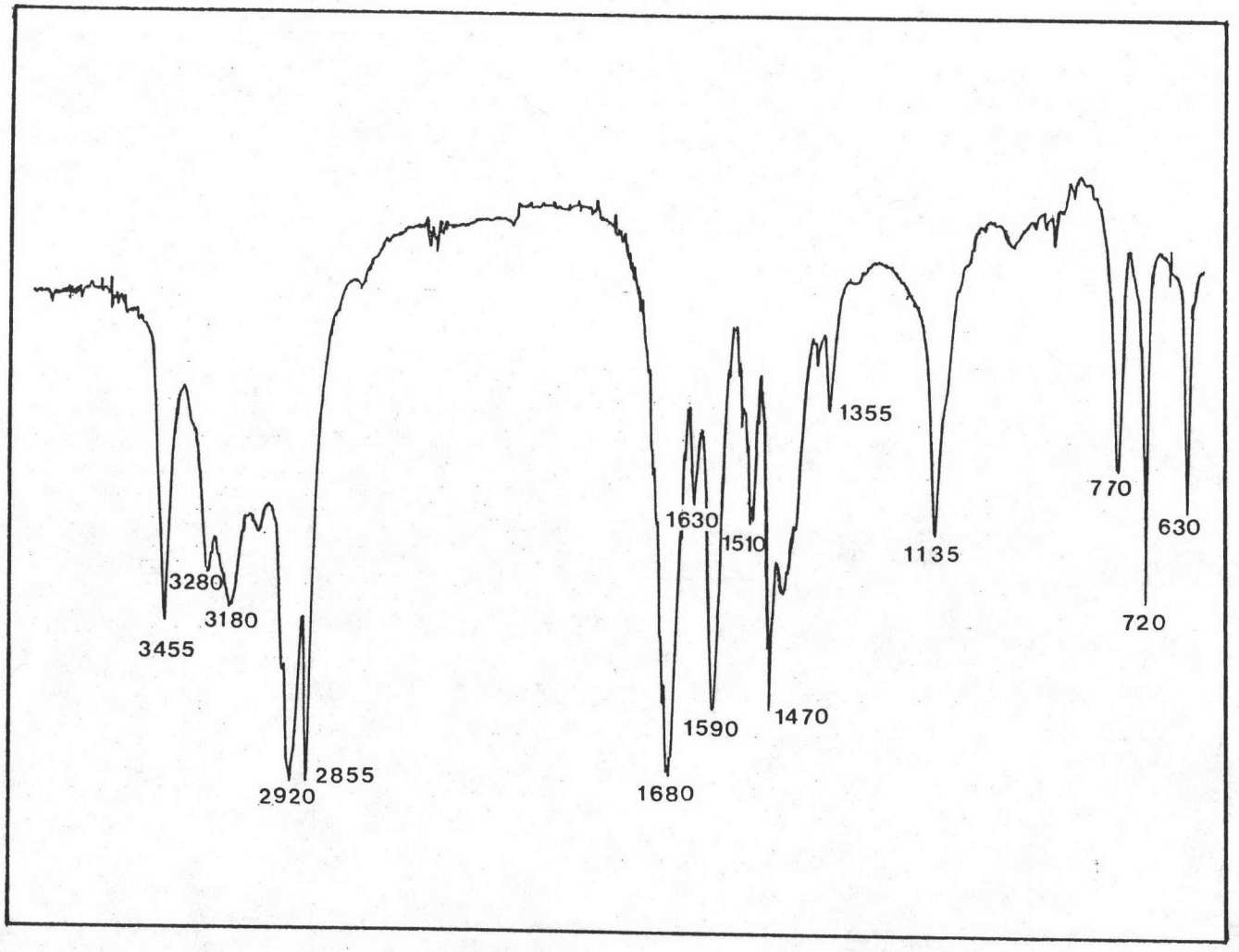

Figure 24 The IR spectrum of semicarbazone derivative of Substance 2

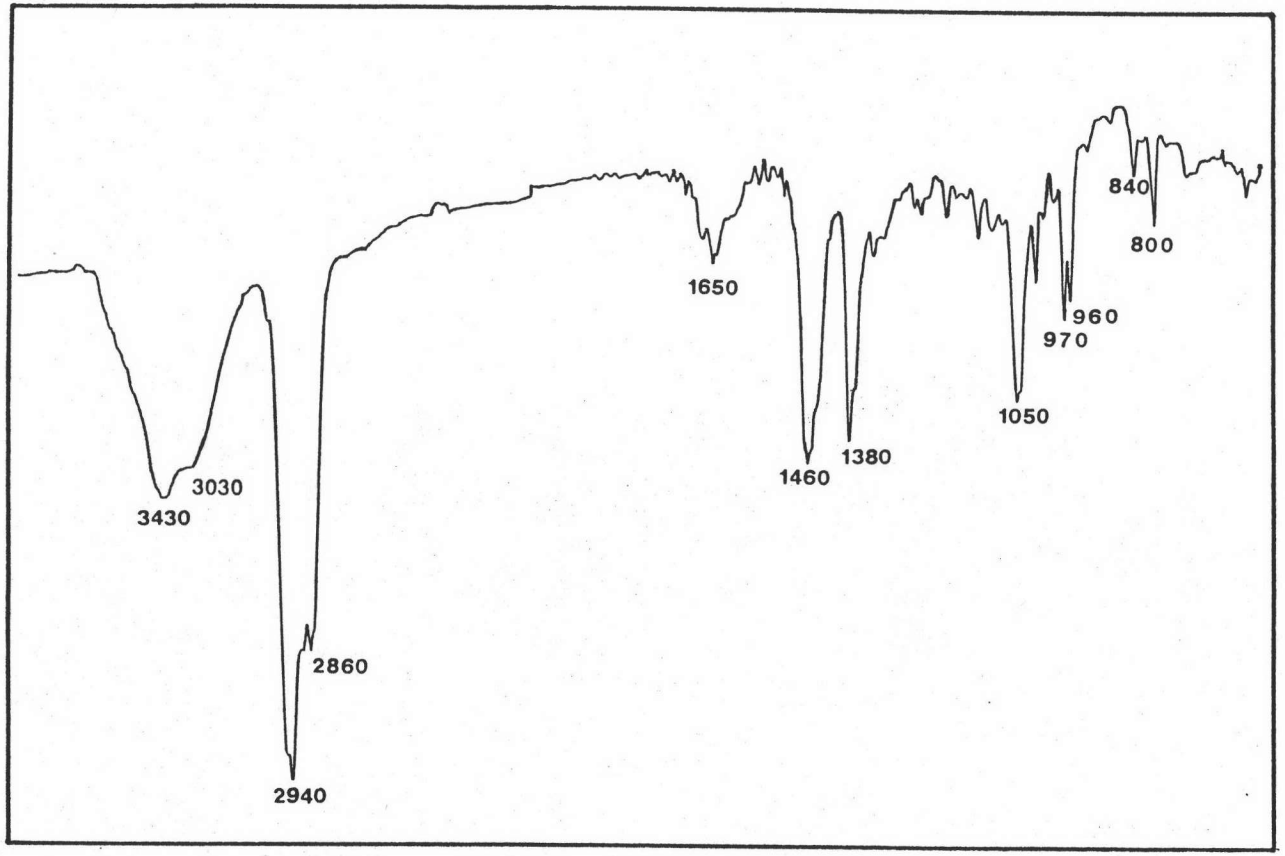

Figure 25 The IR spectrum of Substance 3

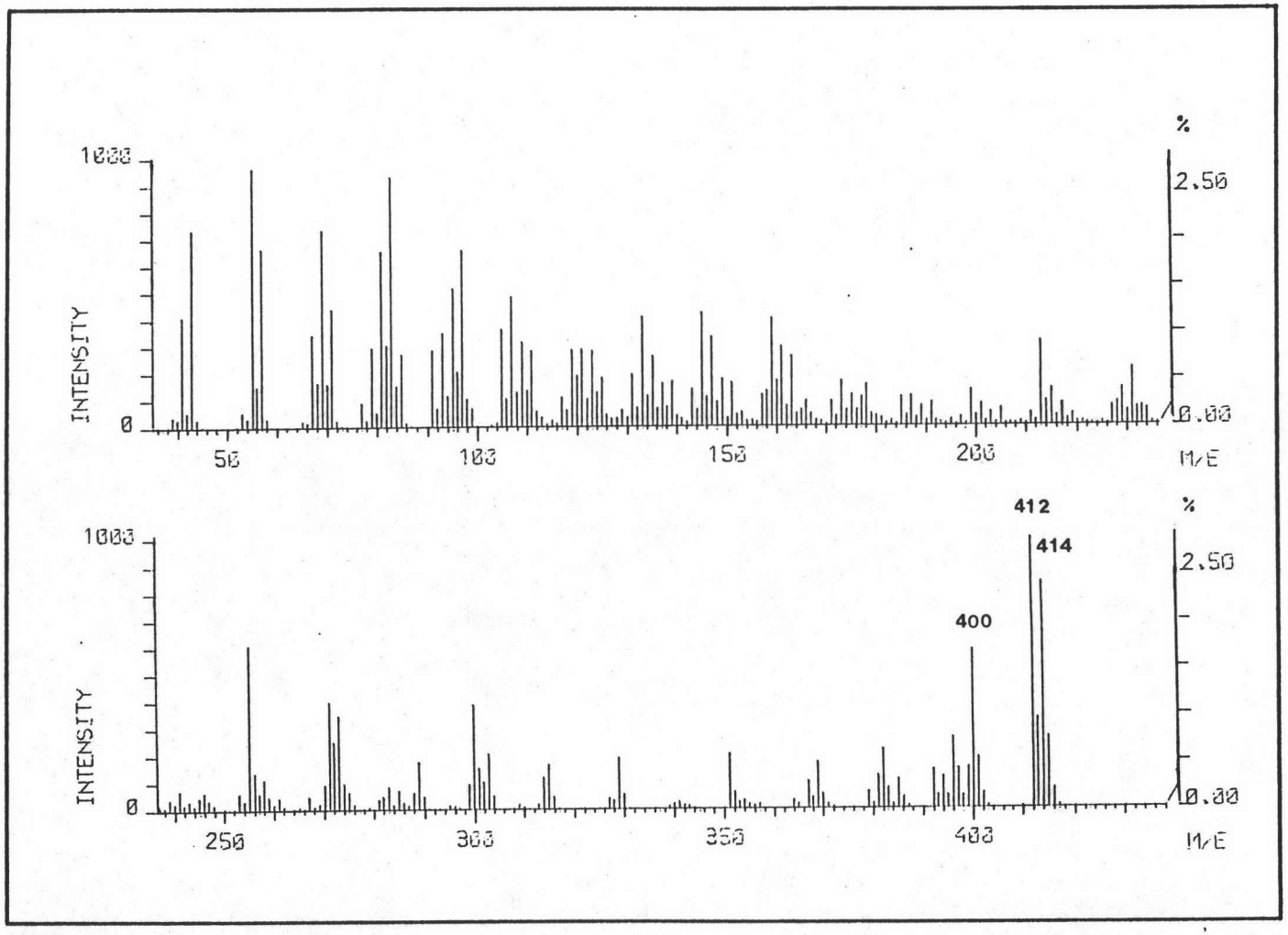

Figure 26 The mass spectrum of Substance 3

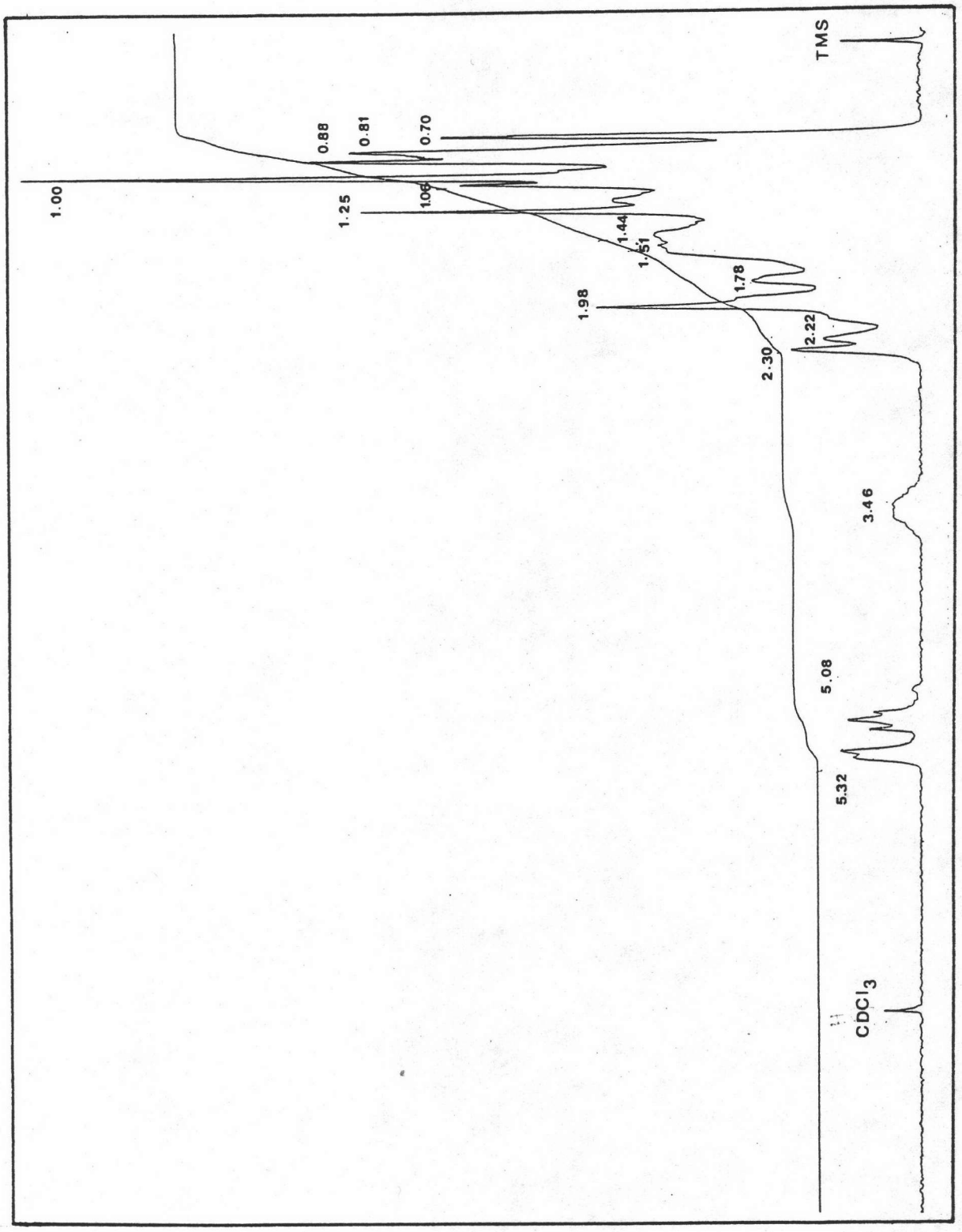

Figure 27 The ^{1}H NMR spectrum of Substance 3

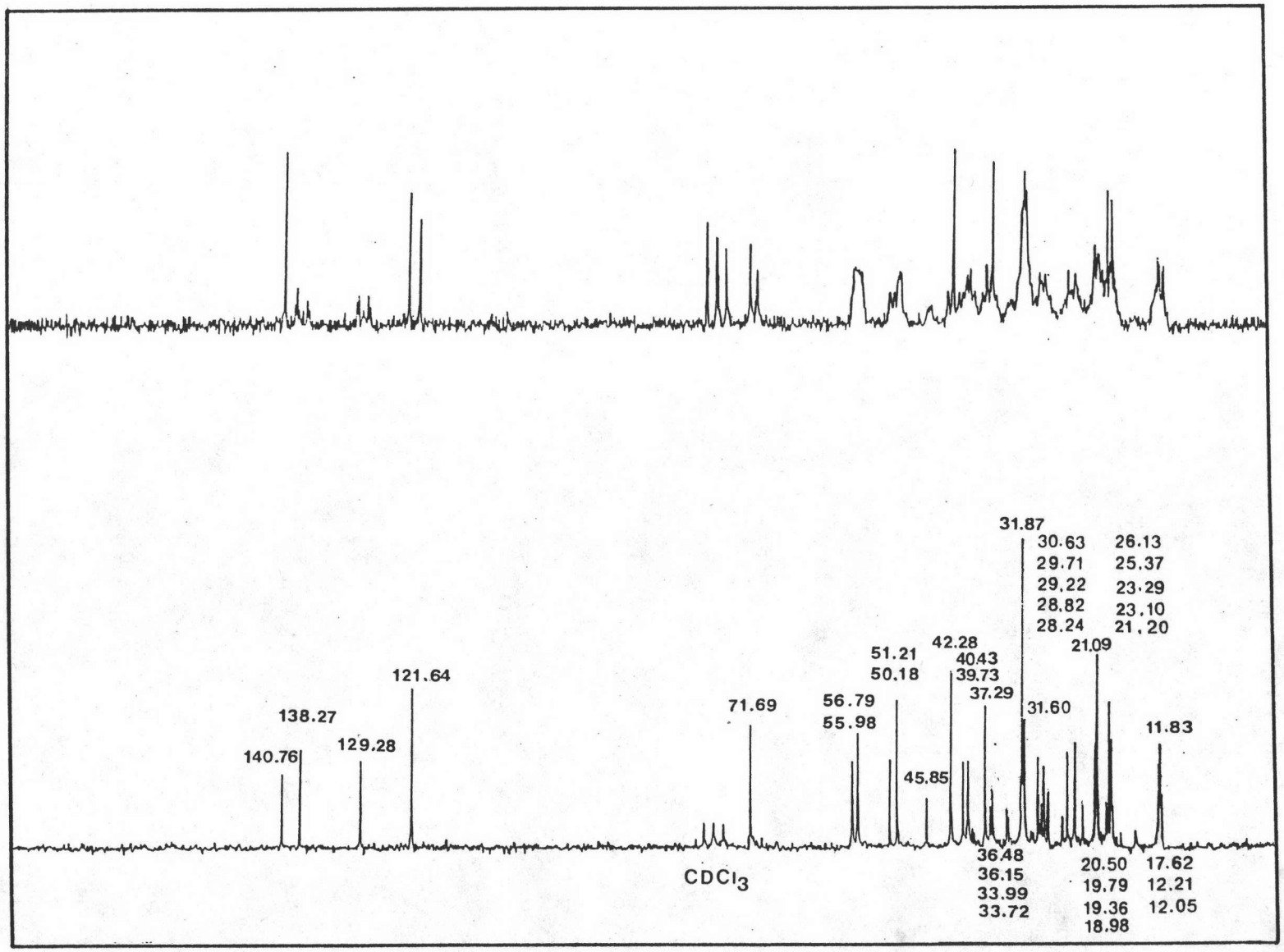

Figure 28 The ^{13}C NMR spectrum of Substance 3

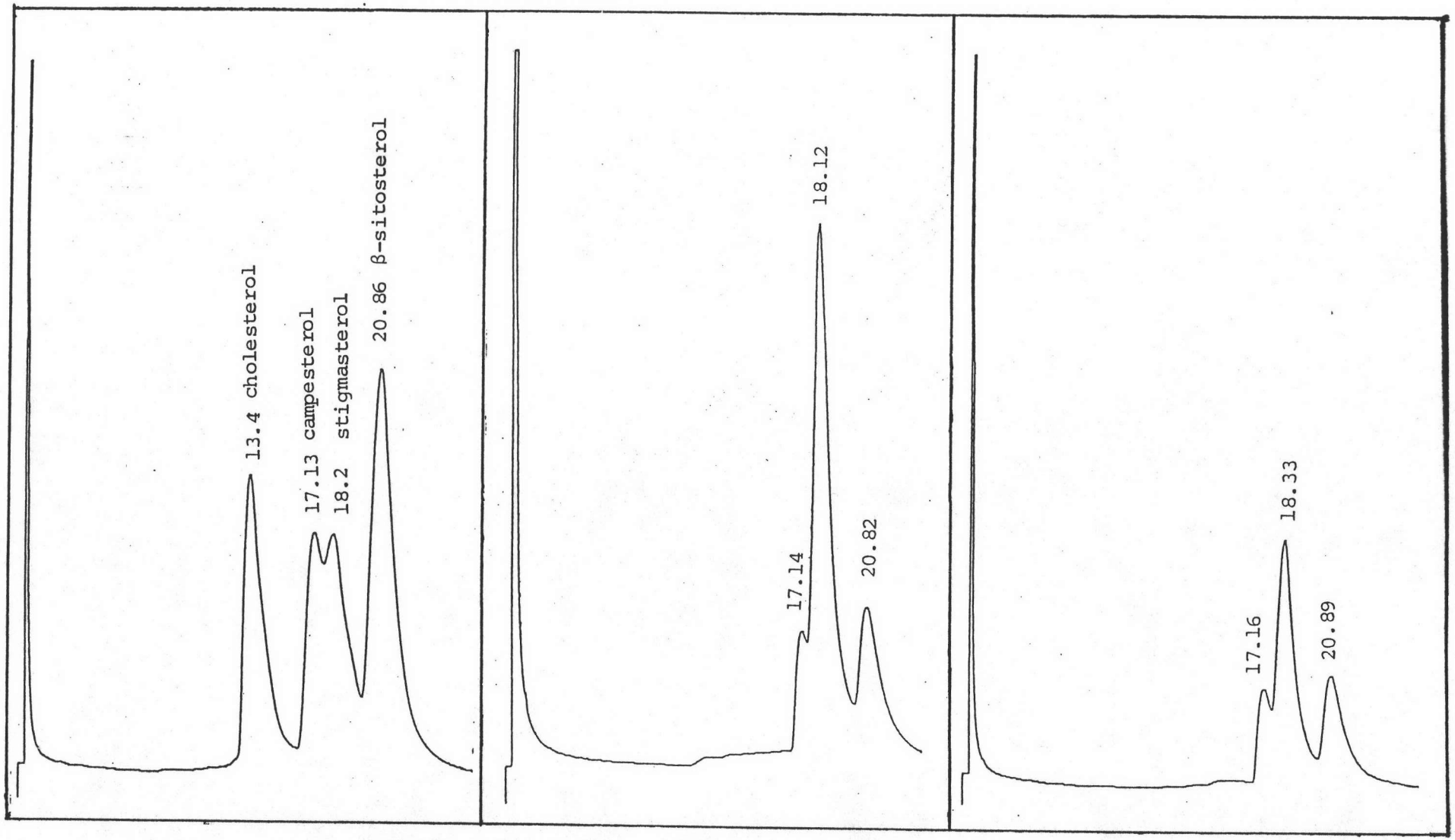

Figure 29 The GC analysis results of Substance 3 from

a) Std. steroids b) Mitr Phol Factory c) Mitr Siam Factory

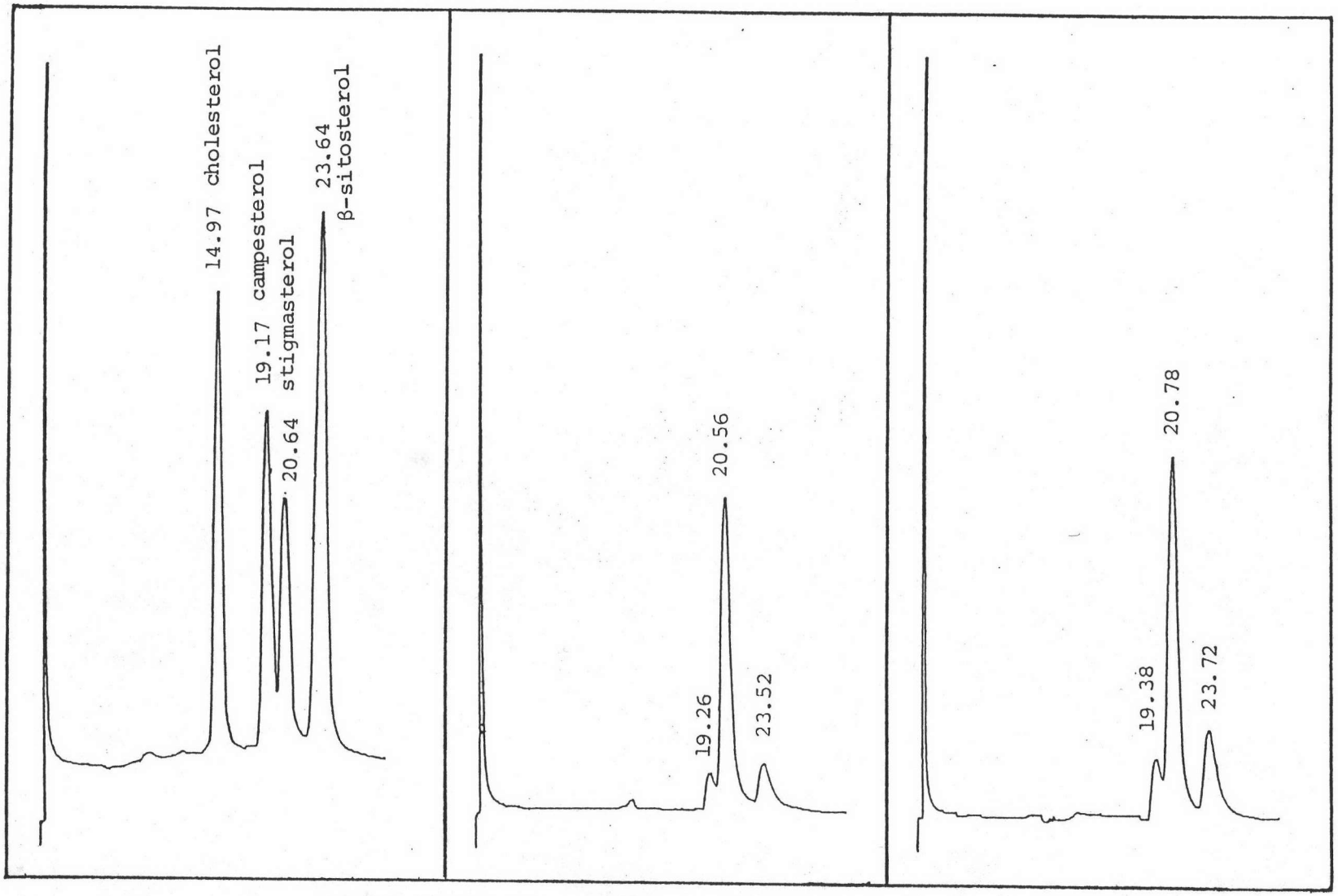

Figure 29 The GC analysis results of Substance 3

d) Std. steroids e) United Farmer&Industry Factory

f) Khumphawapi Factory

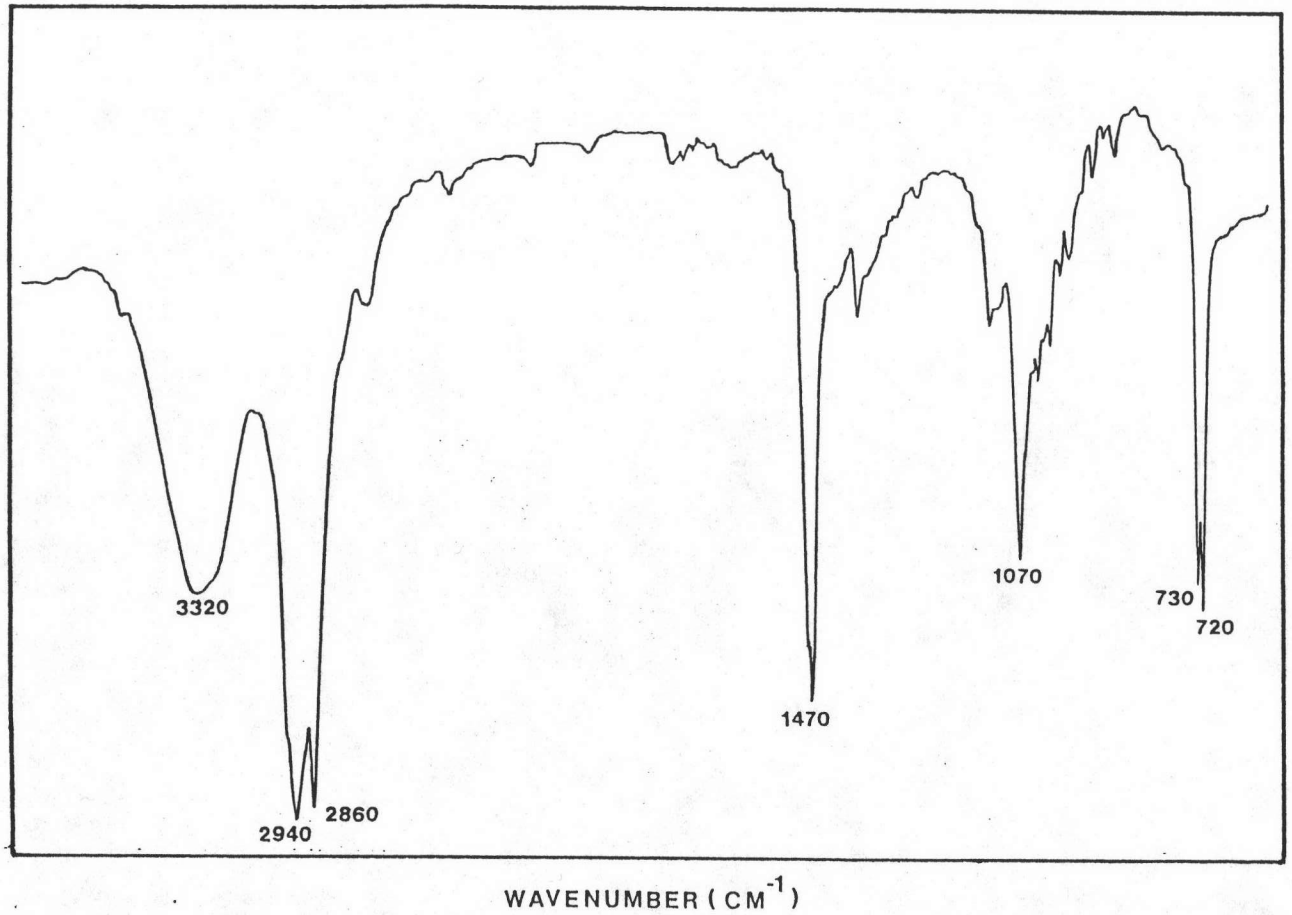

Figure 30 The IR spectrum of Substance 4

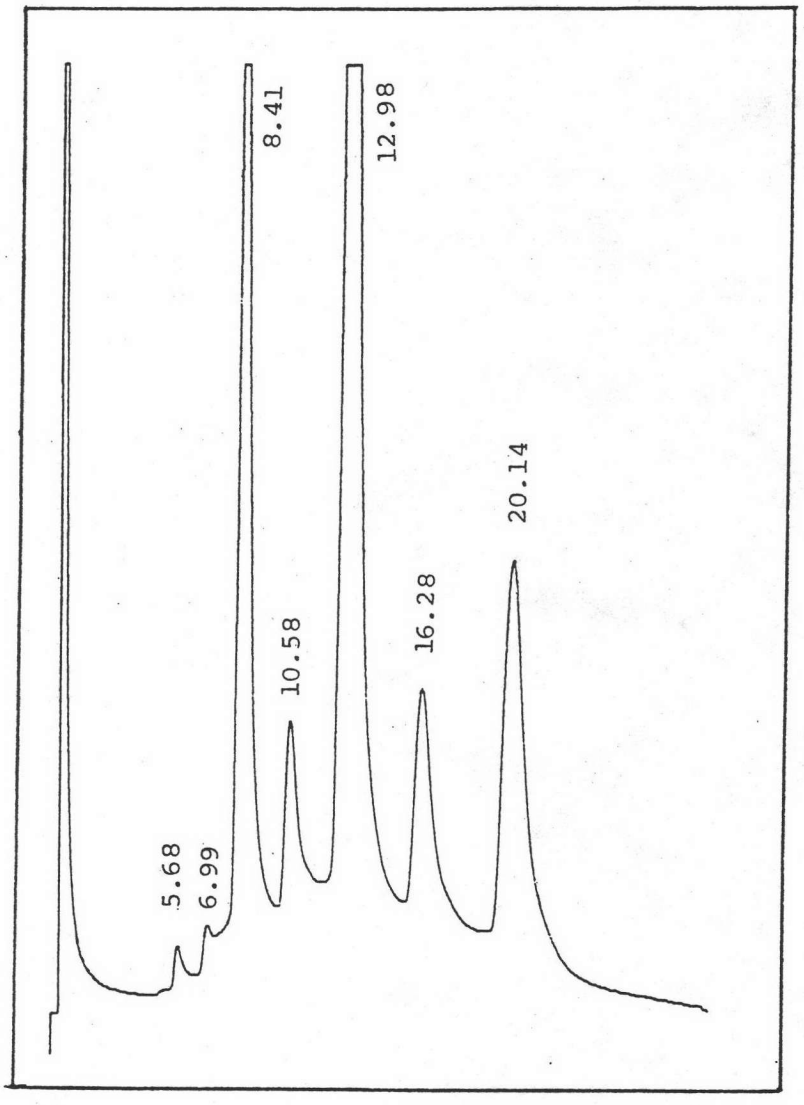

Figure 31a The GC analysis of std. alcohols ($C_{28}H_{57}OH$-$C_{34}H_{69}OH$)

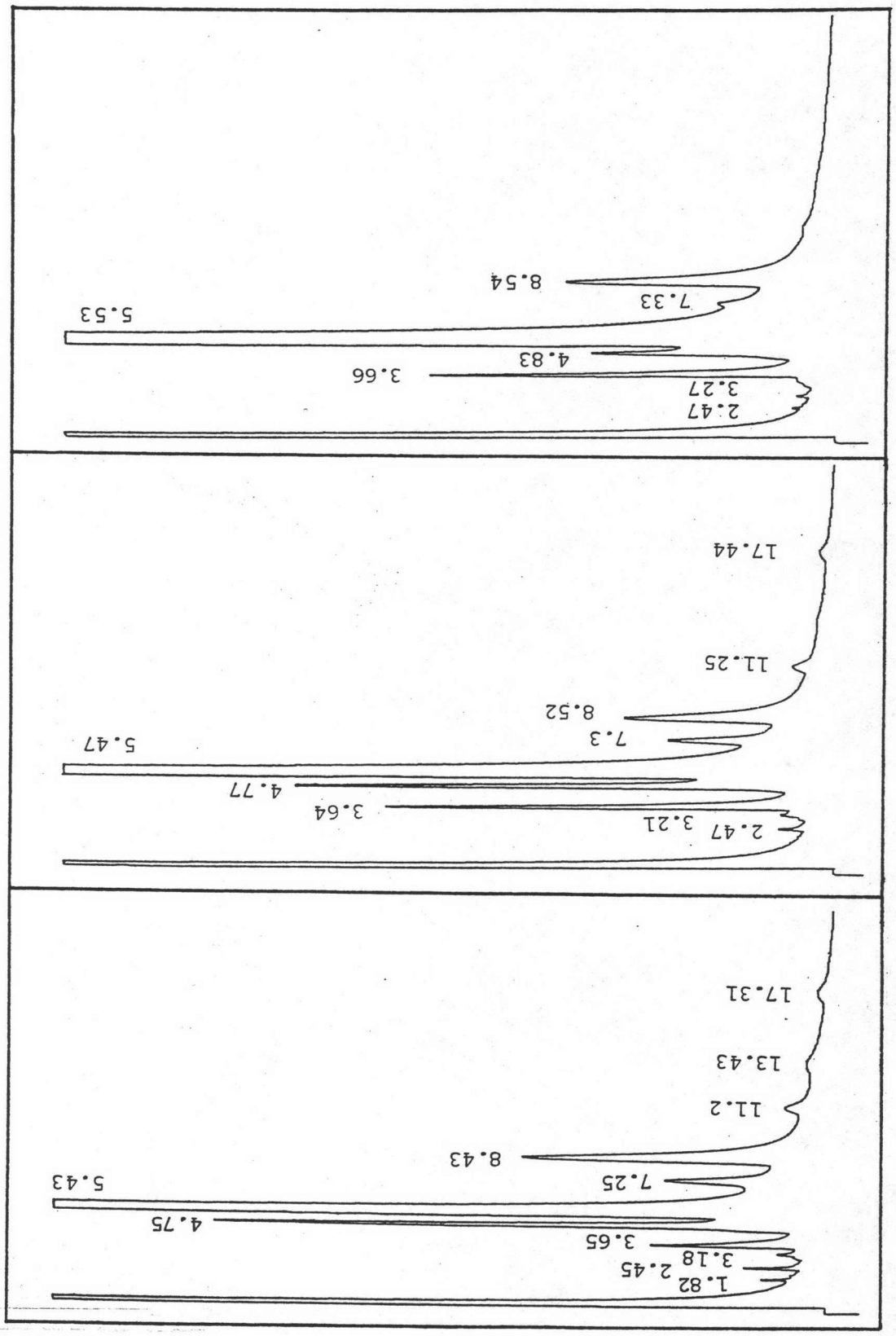

Figure 31 The GC analysis of Substance 4 from b) Q83 variety c) F147 variety d) F153 variety

Figure 31 The GC analysis of Substance 4 from
e) United Farmer&Industry f) Mitr Phol Factory
g) Mitr Siam Factory

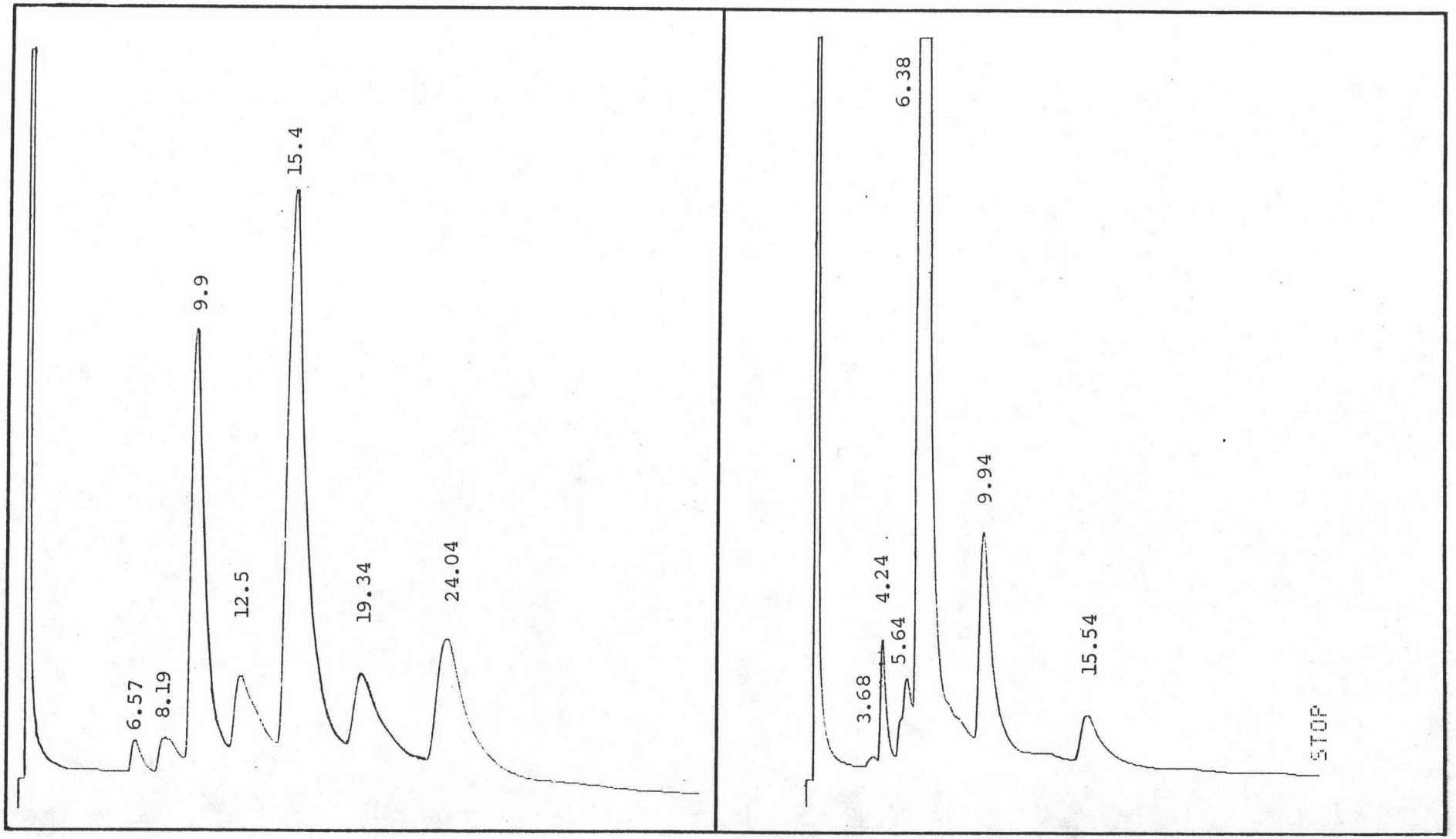

Figure 31 The GC analysis of Substance 4 from

h) Std. alcohols (for Khumphawapi Factory) i) Khumphawapi Factory

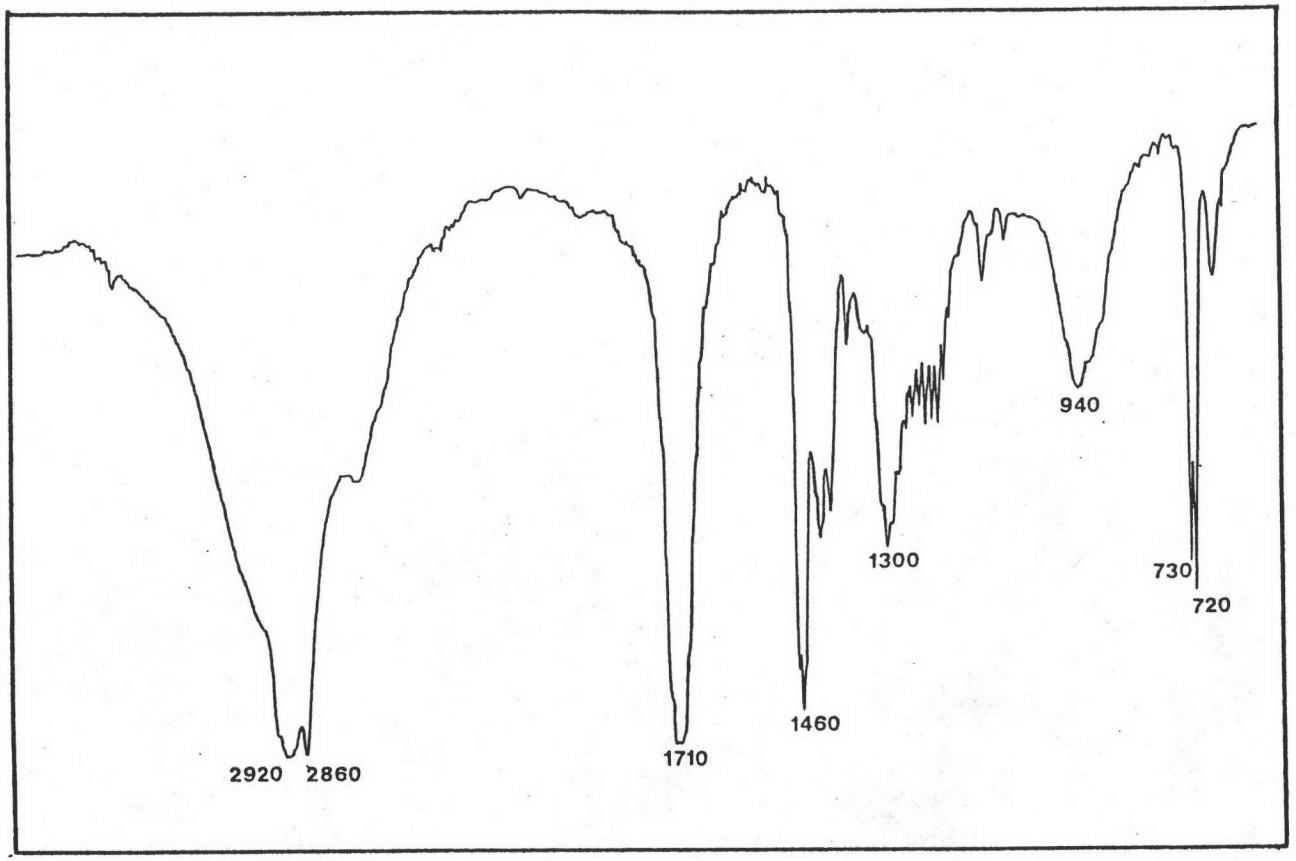

Figure 32 The IR spectrum of Substance 5

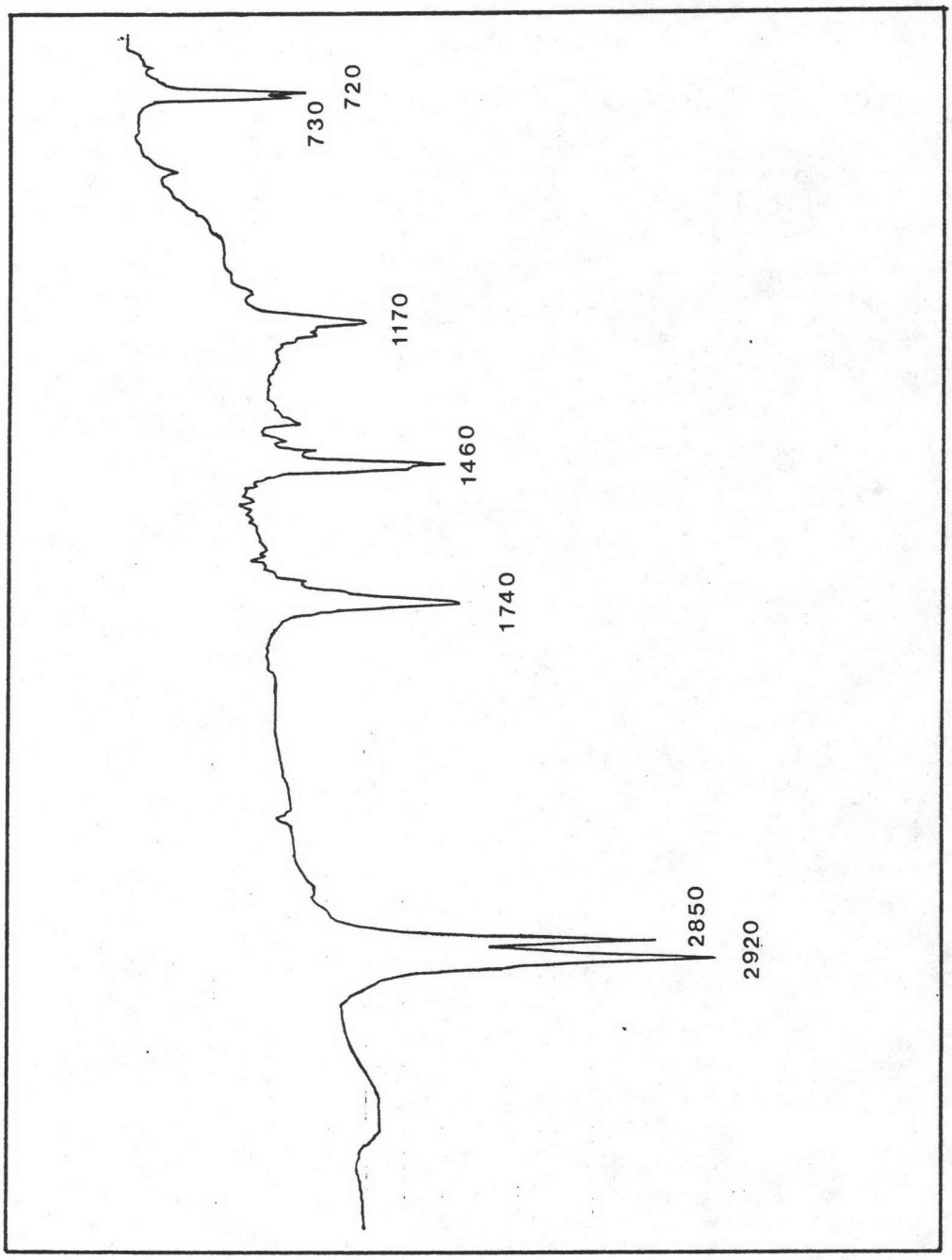

Figure 33 The IR spectrum of methyl ester derivative of Substance 5

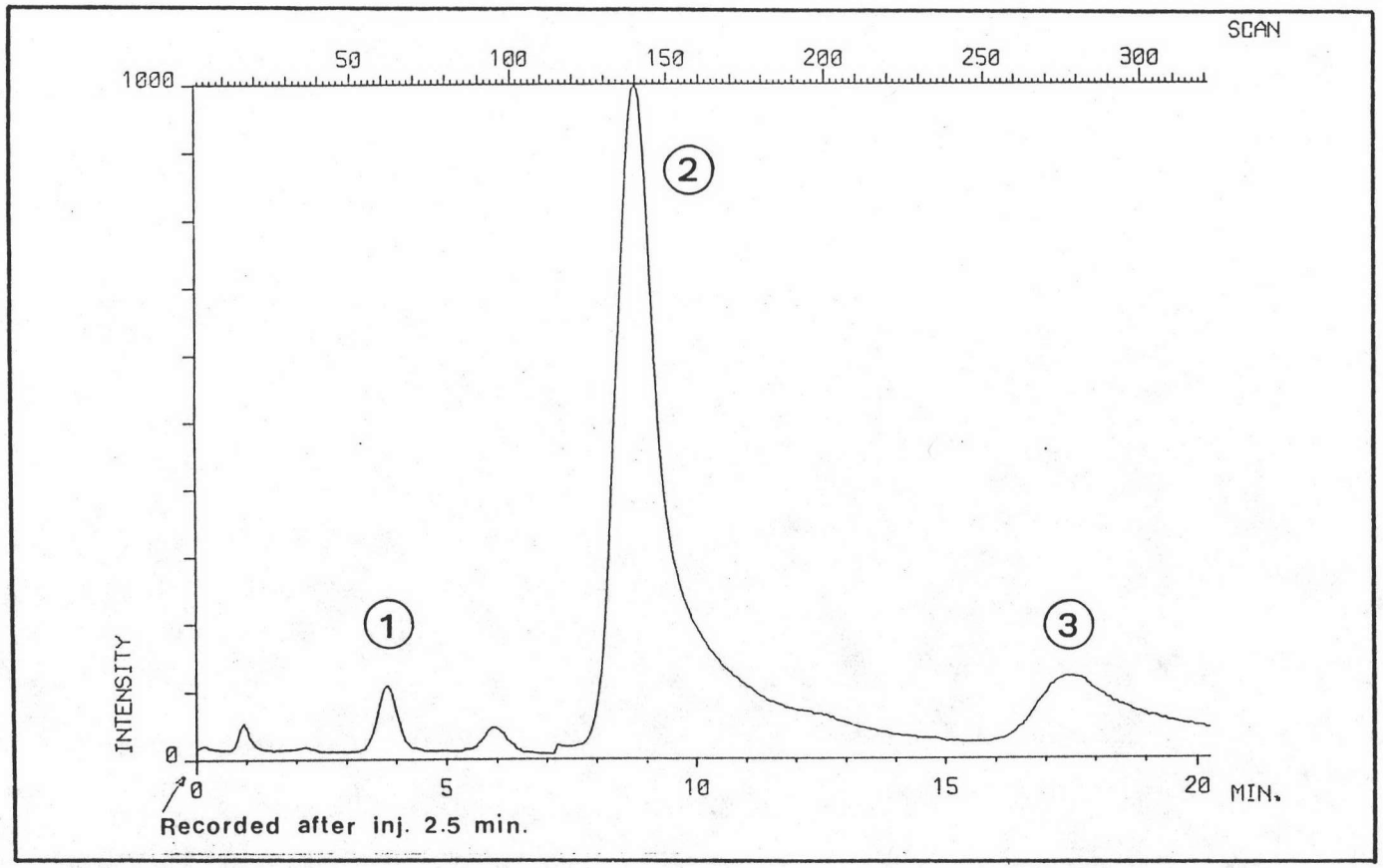

Figure 34 The gas chromatogram of GC-MS analysis of methyl ester derivative of Substance 5

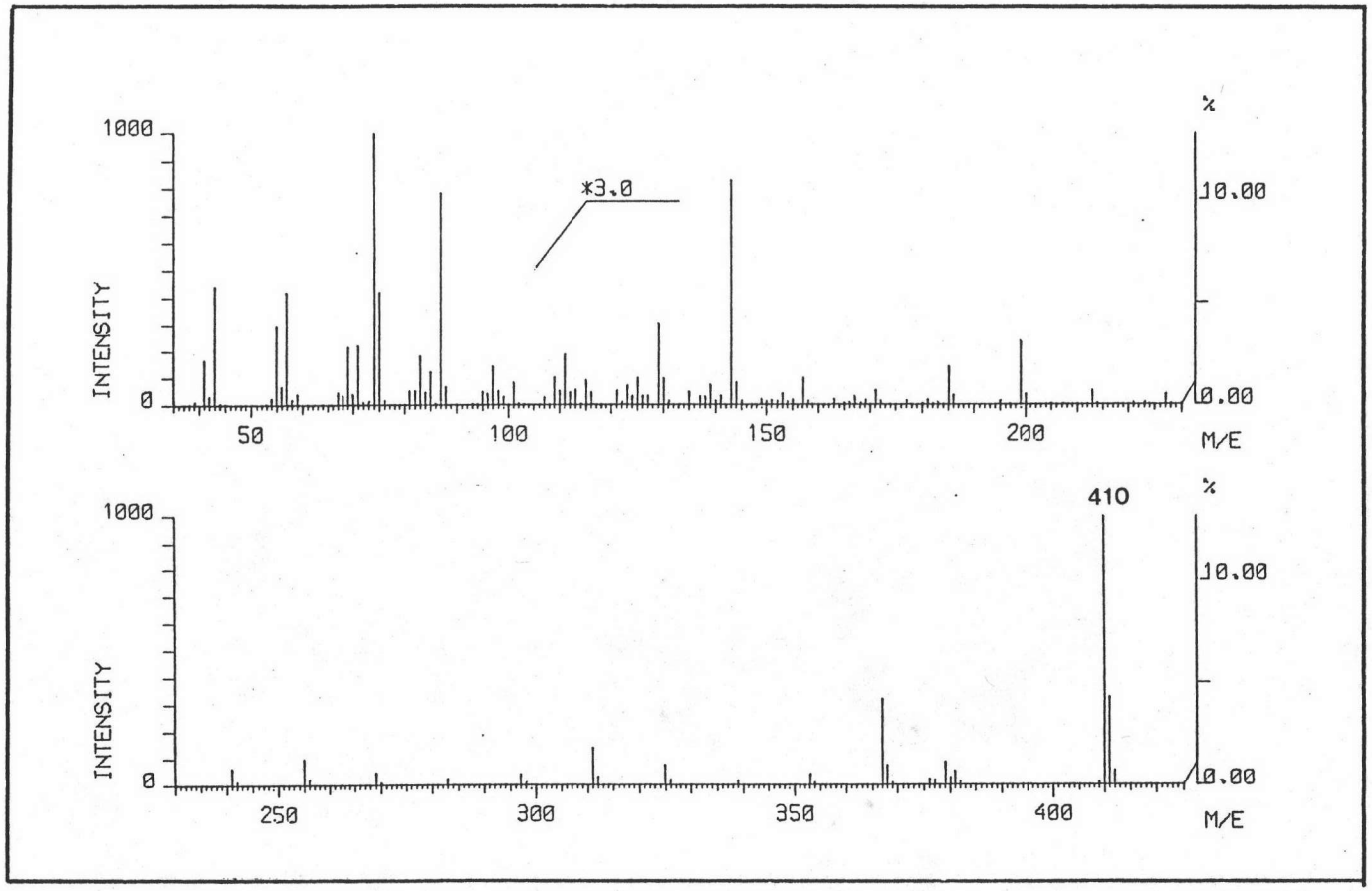

Figure 35 The mass spectrum of Peak 1 of GC-MS analysis of methyl ester derivative of Substance 5

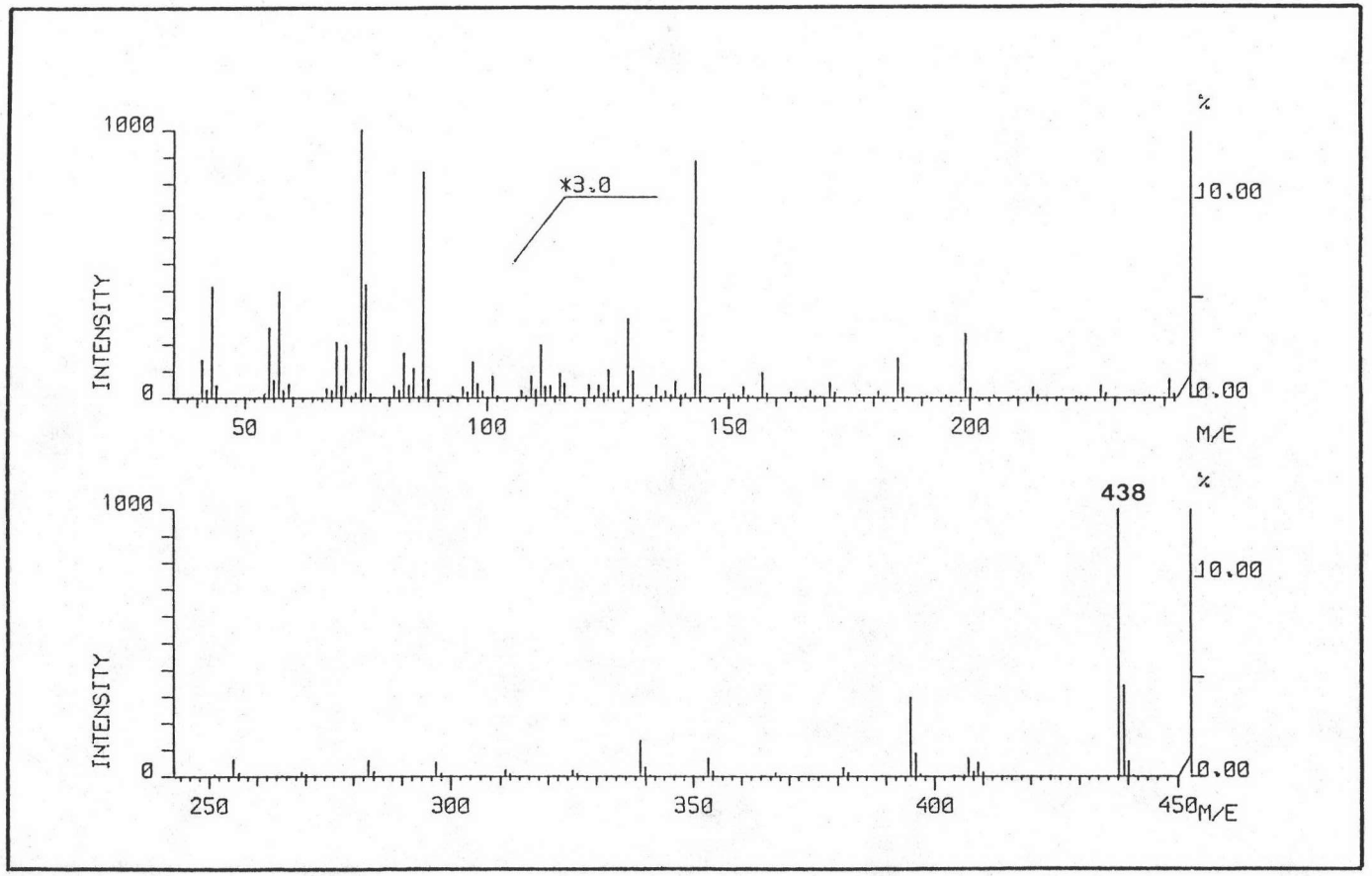

Figure 36 The mass spectrum of Peak 2 of GC-MS analysis of methyl ester derivative of Substance 5

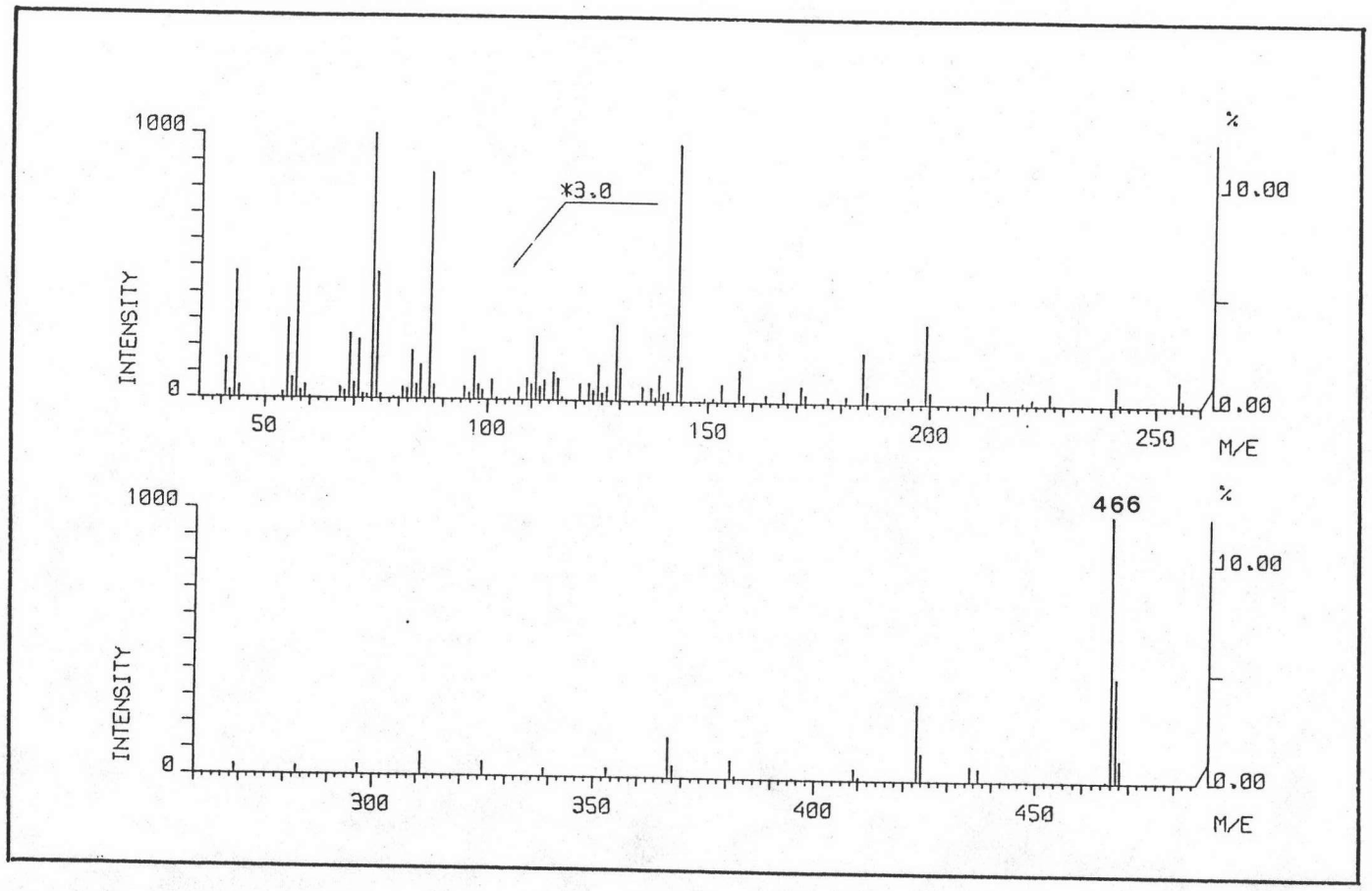

Figure 37 The mass spectrum of Peak 3 of GC-MS analysis of methyl ester derivative of Substance 5

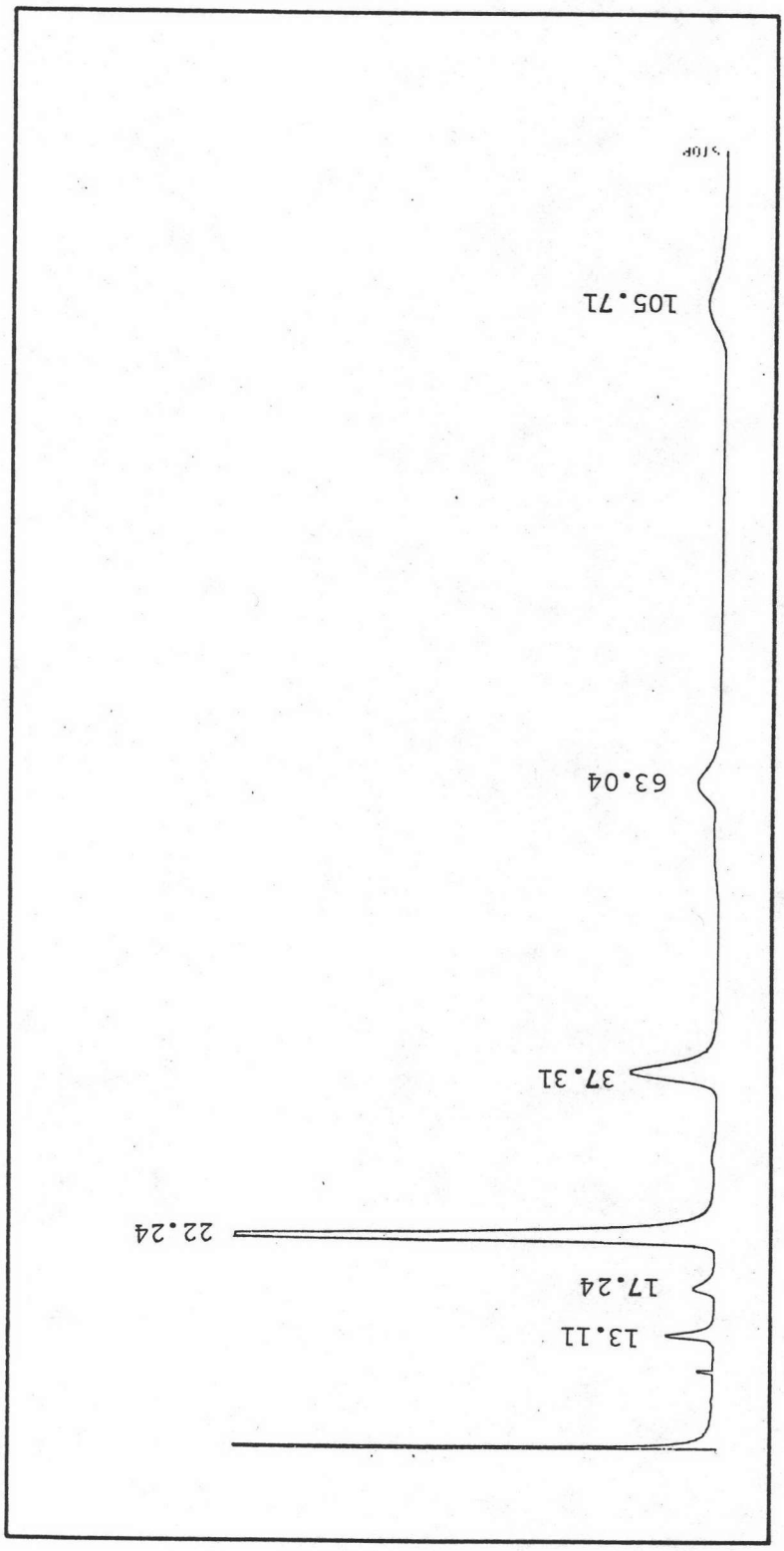

Figure 38a The GC analysis results of methyl ester derivative of Substance 5 from F147 variety

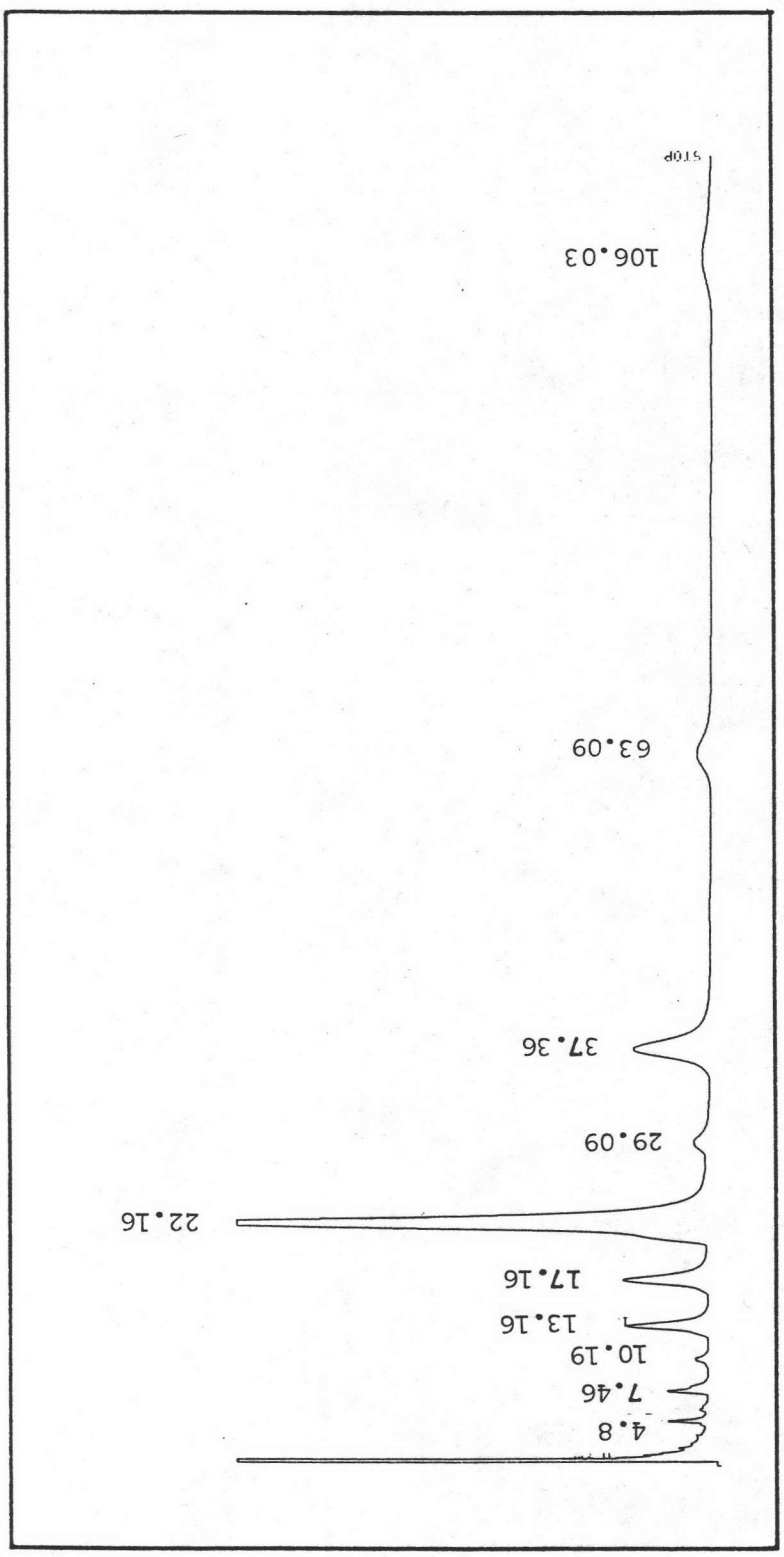

Figure 38b The GC analysis results of methyl ester derivative of Substance 5 from F153 variety

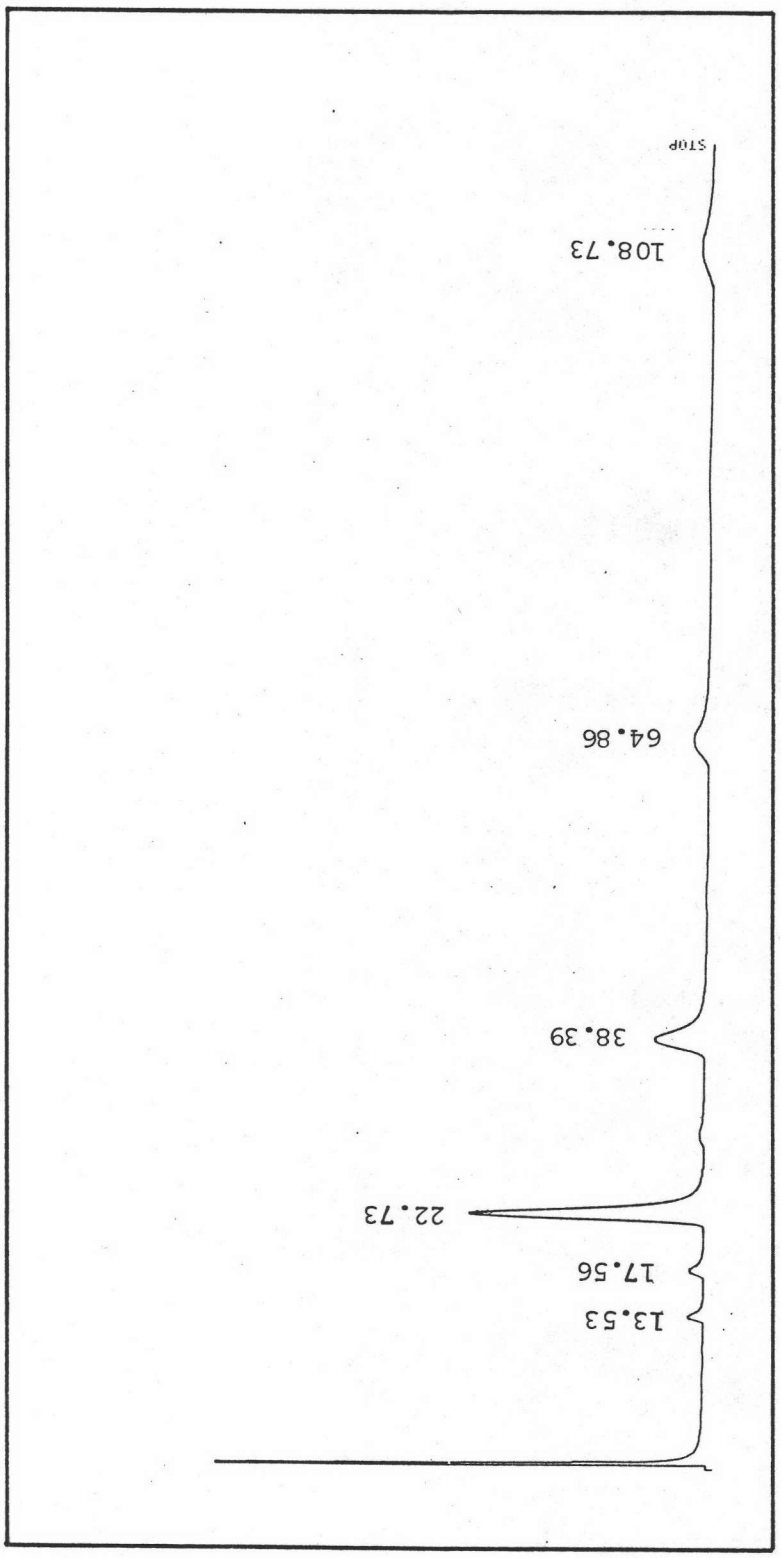

Figure 38c The GC analysis results of methyl ester derivative of Substance 5 from Q83 variety

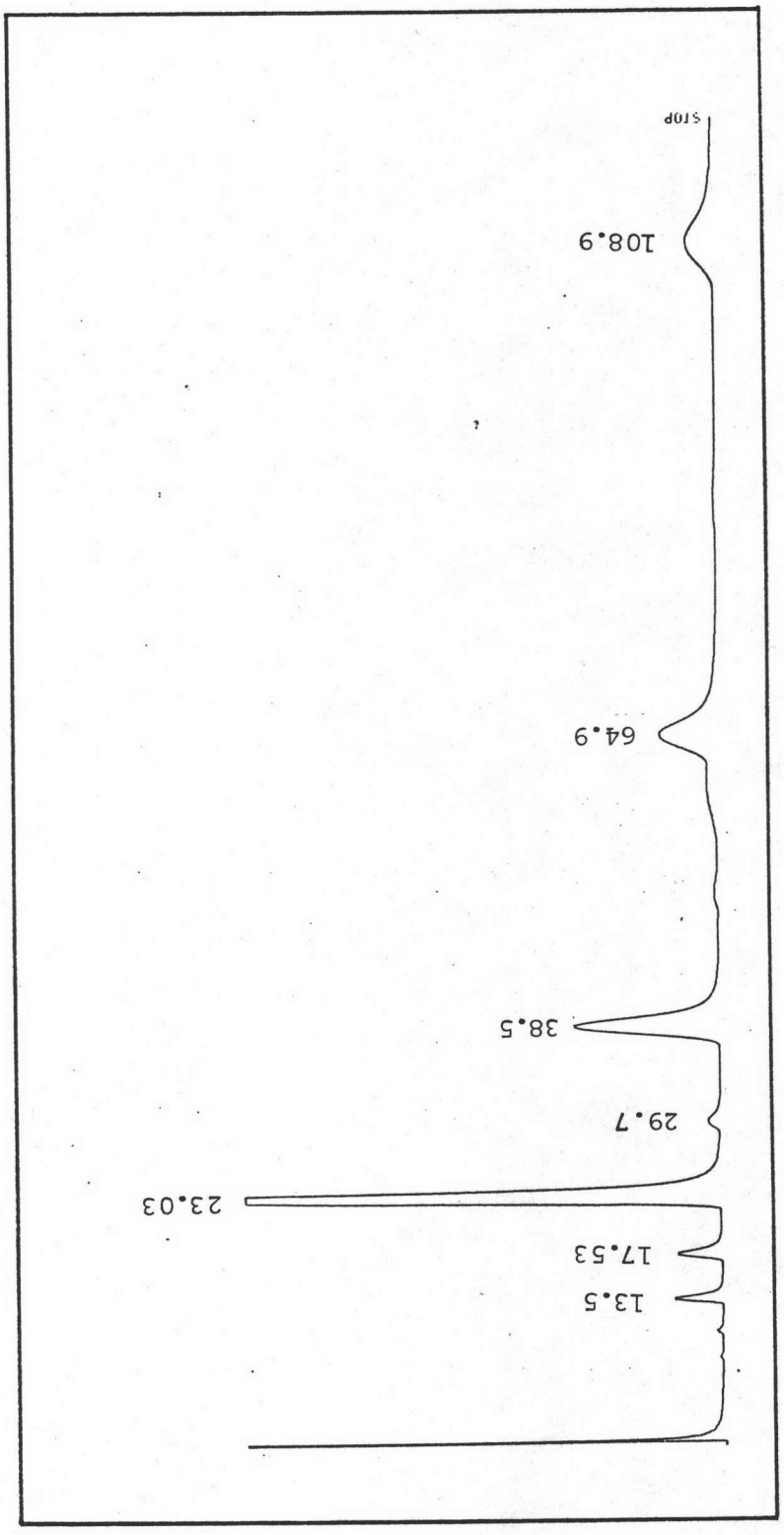

Figure 38d The GC analysis results of methyl ester derivative of Substance 5 from Mitr Phol Factory

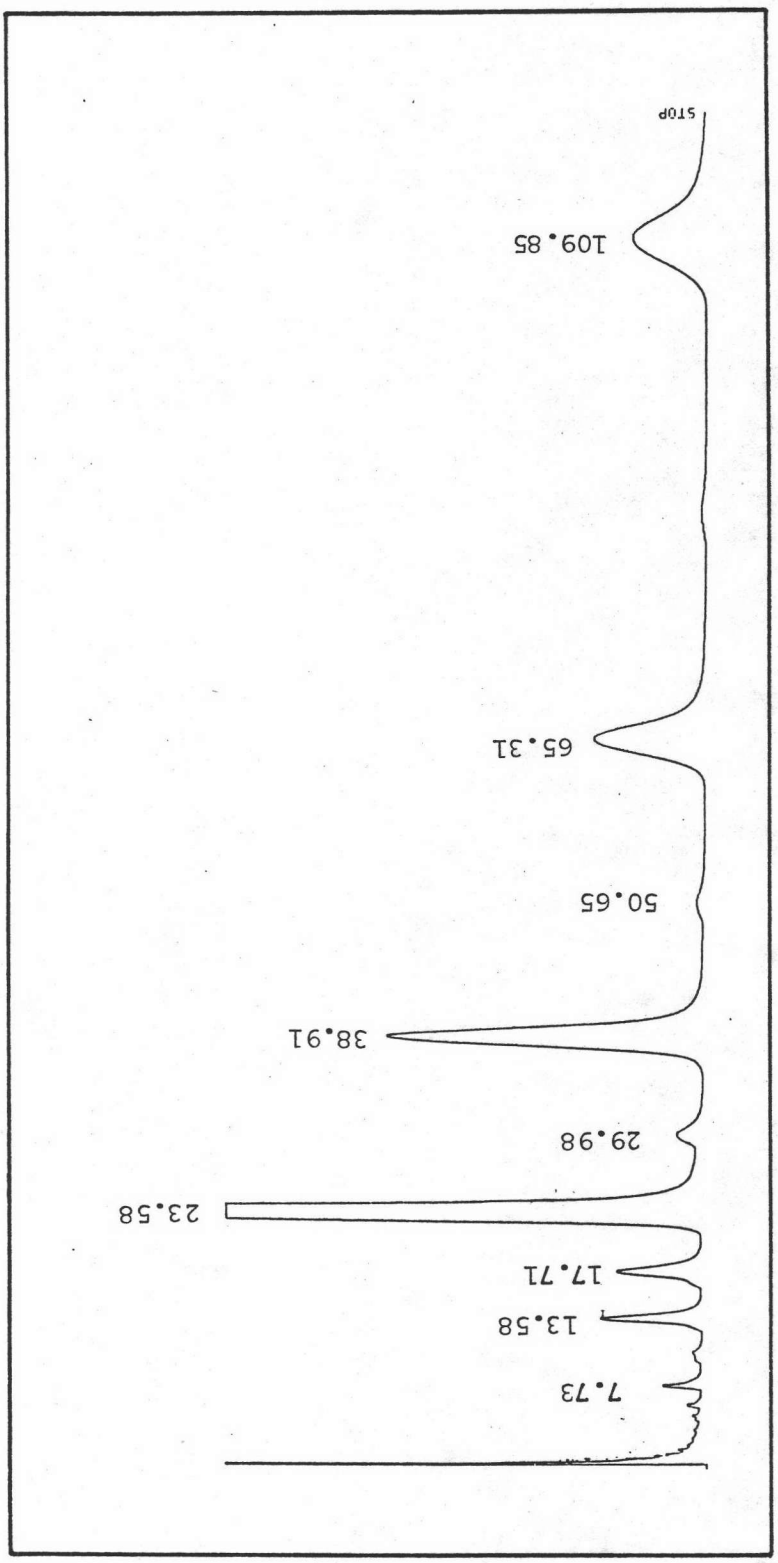

Figure 38e The GC analysis results of methyl ester derivative of Substance 5 from Mitr Siam Factory

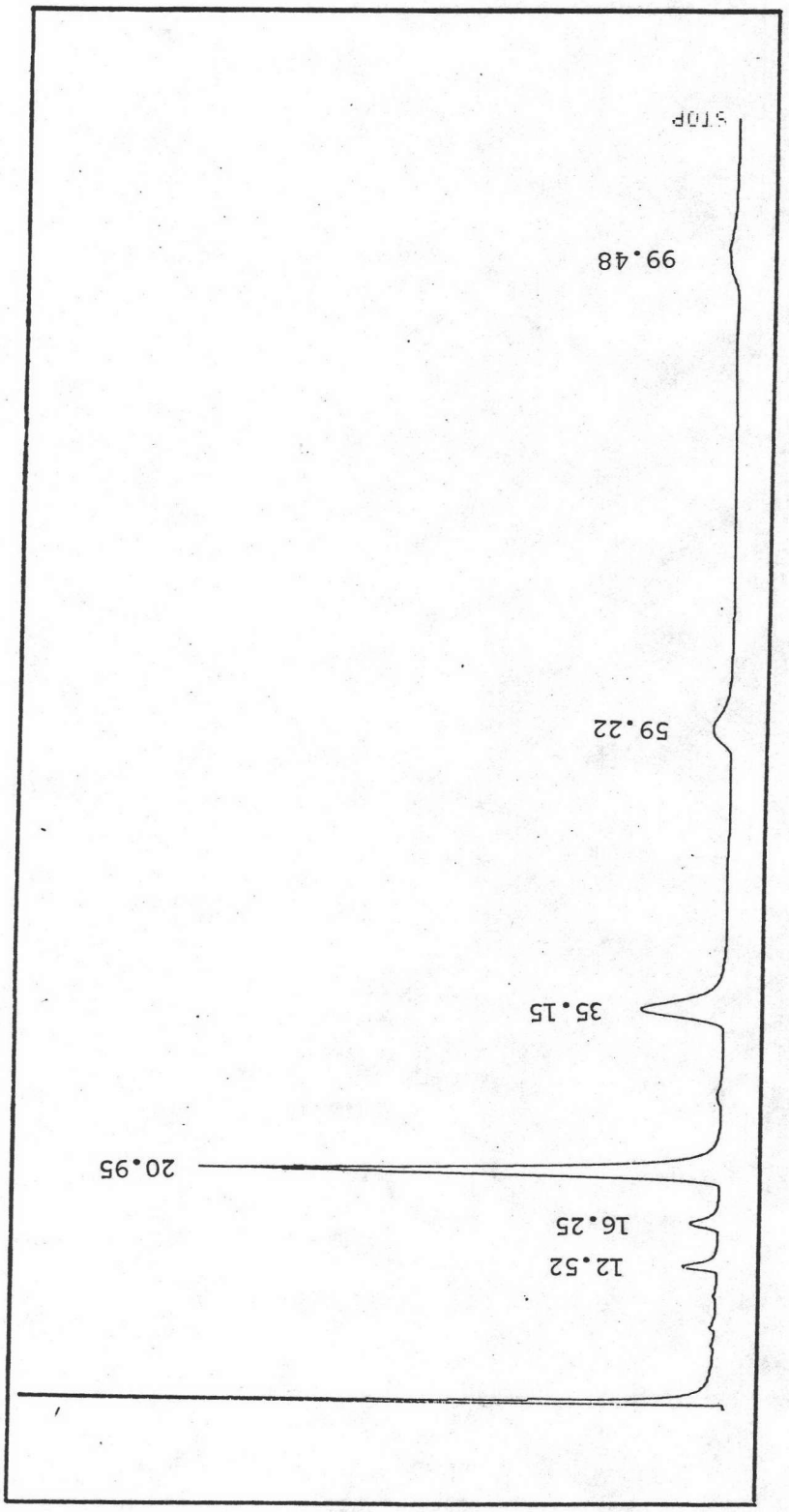

Figure 38f The GC analysis results of methyl ester derivative of Substance 5 from KHumphawapi Factory

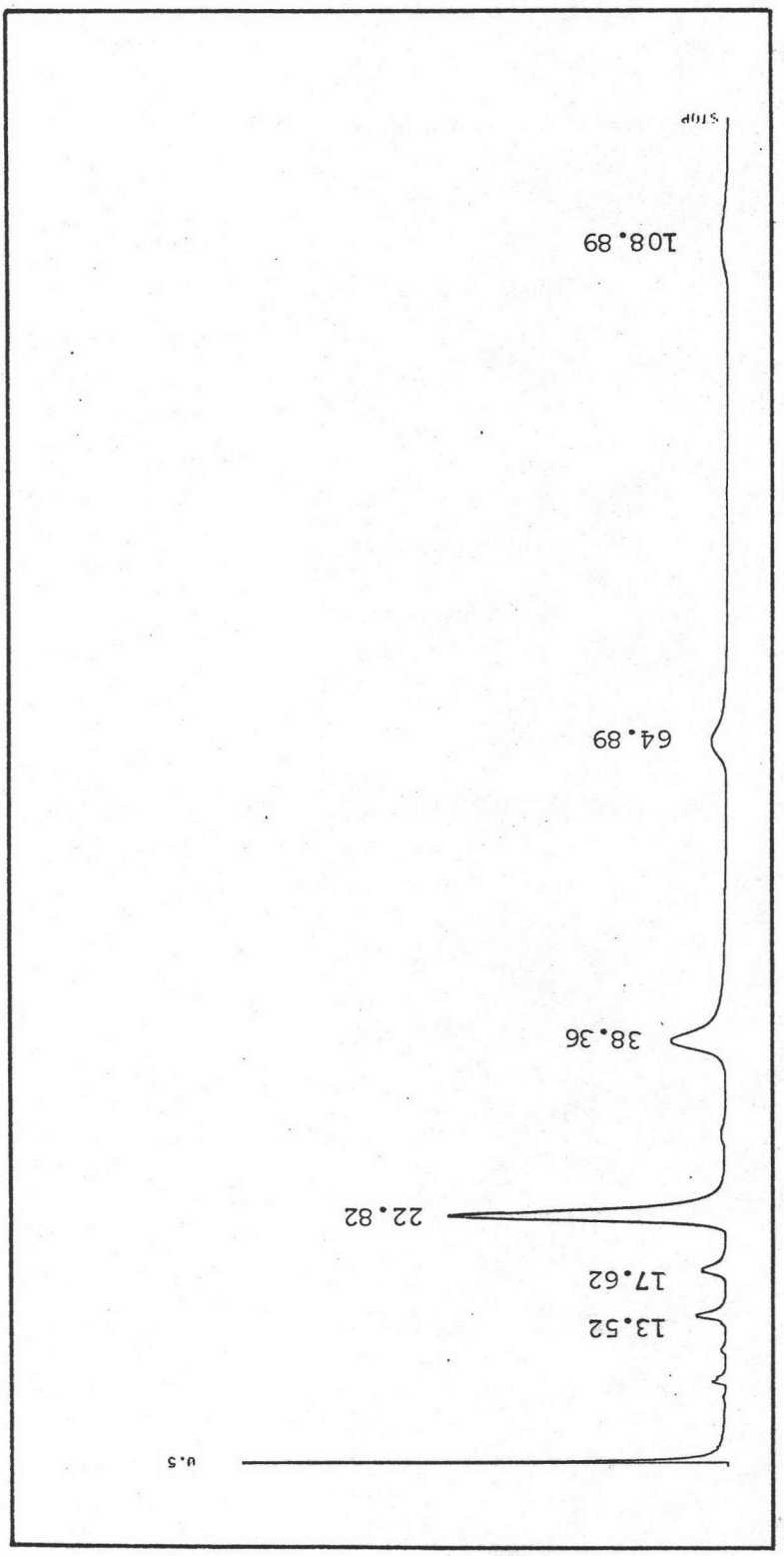

Figure 38g The GC analysis results of methyl ester derivative of Substance 5 from United Farmer&Industry Factory

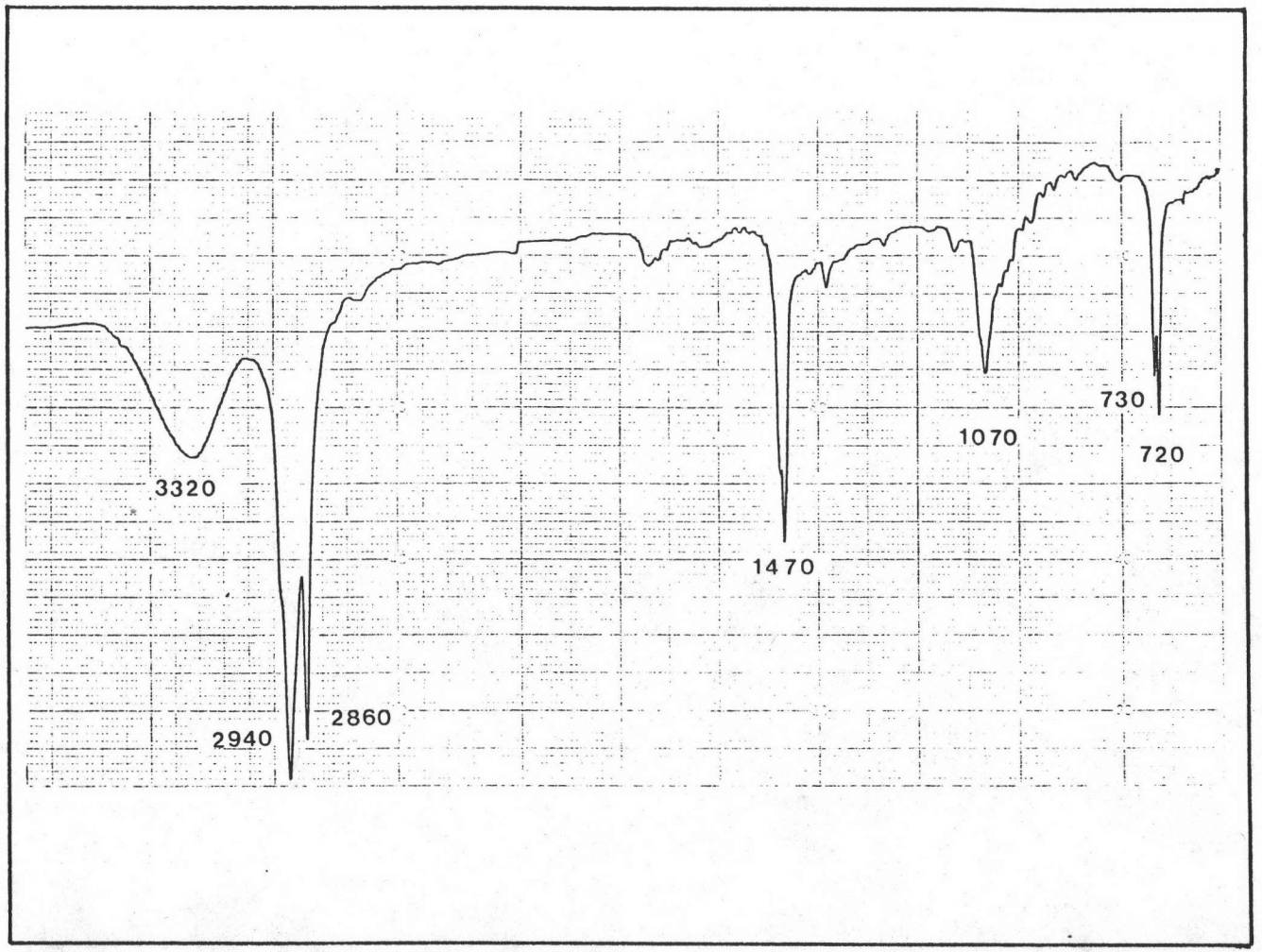

Figure 39 The IR spectrum of Substance 6

Figure 40 The GC analysis results of

a) Std.alcohols b) Substance 6

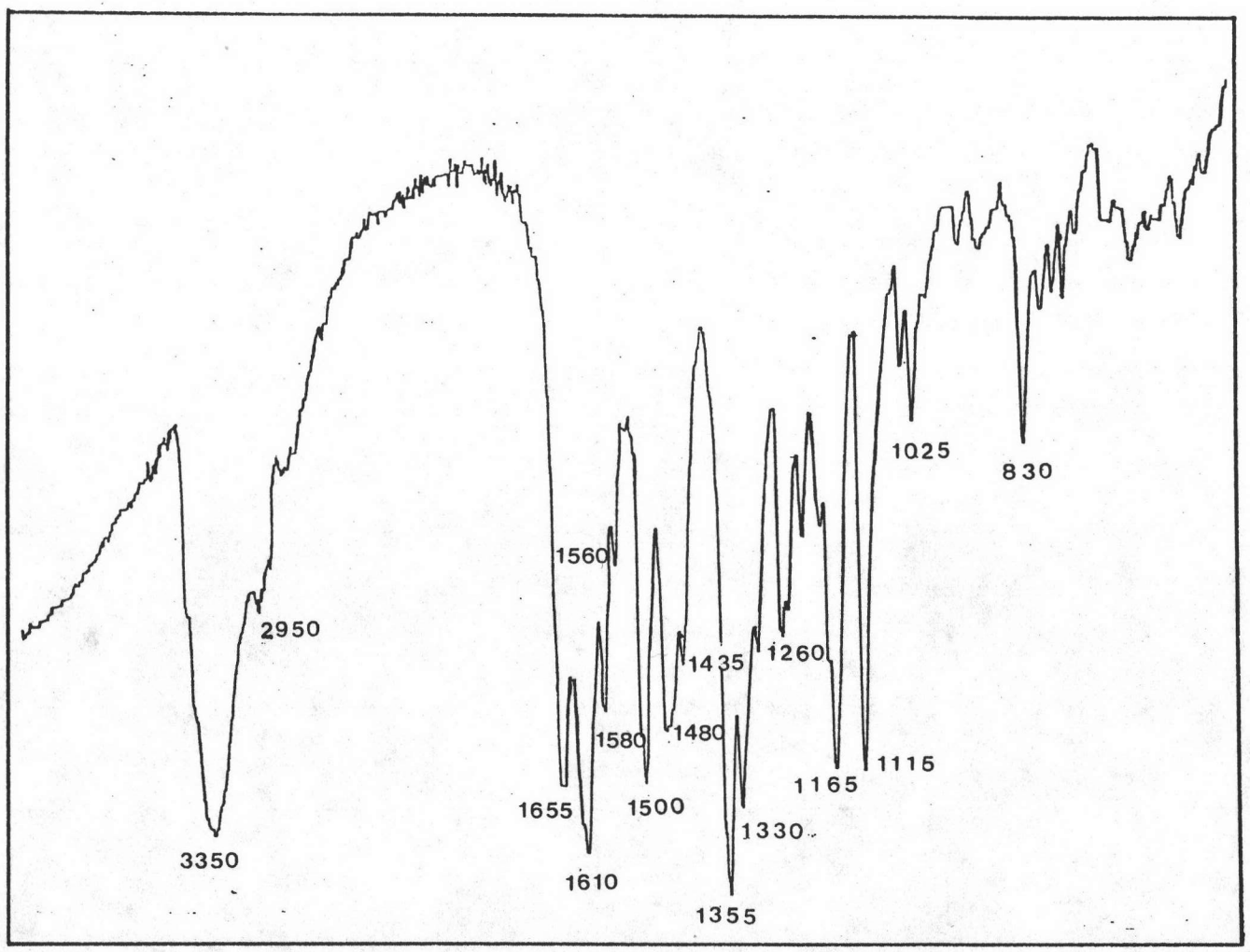

Figure 41 The IR spectrum of Compound 7

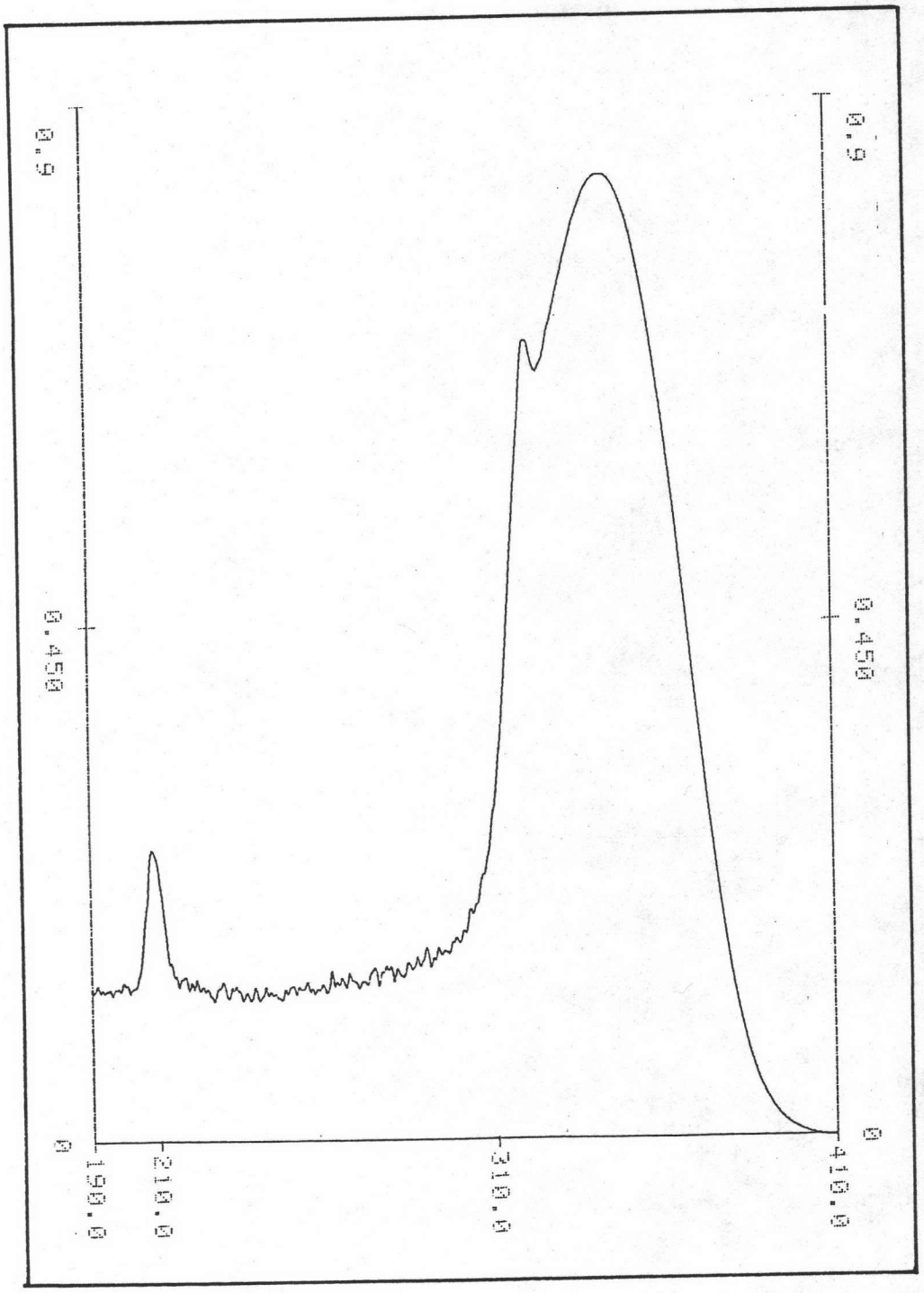

Figure 42 The UV spectrum of Compound 7

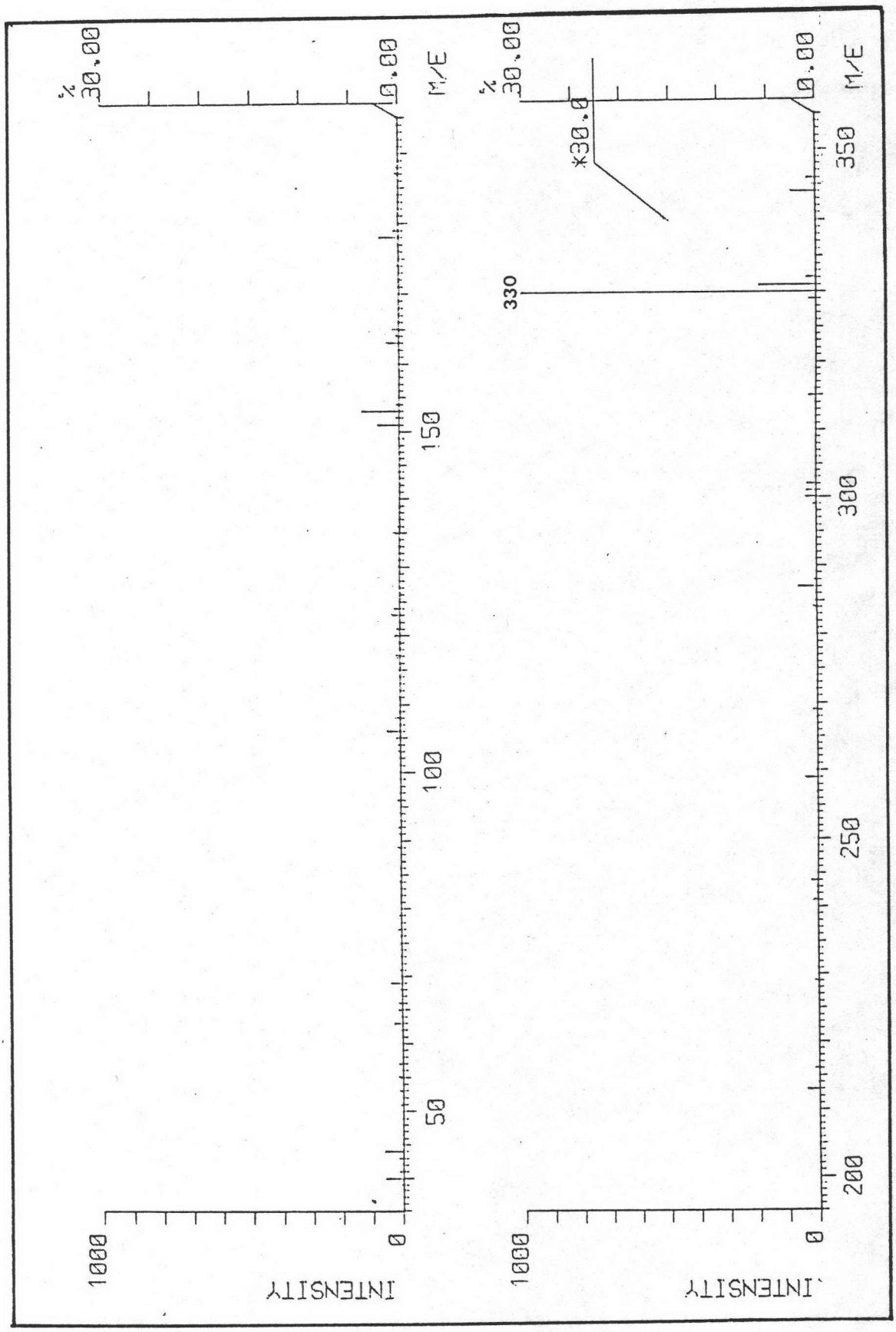

Figure 43 The mass spectrum of Compound 7

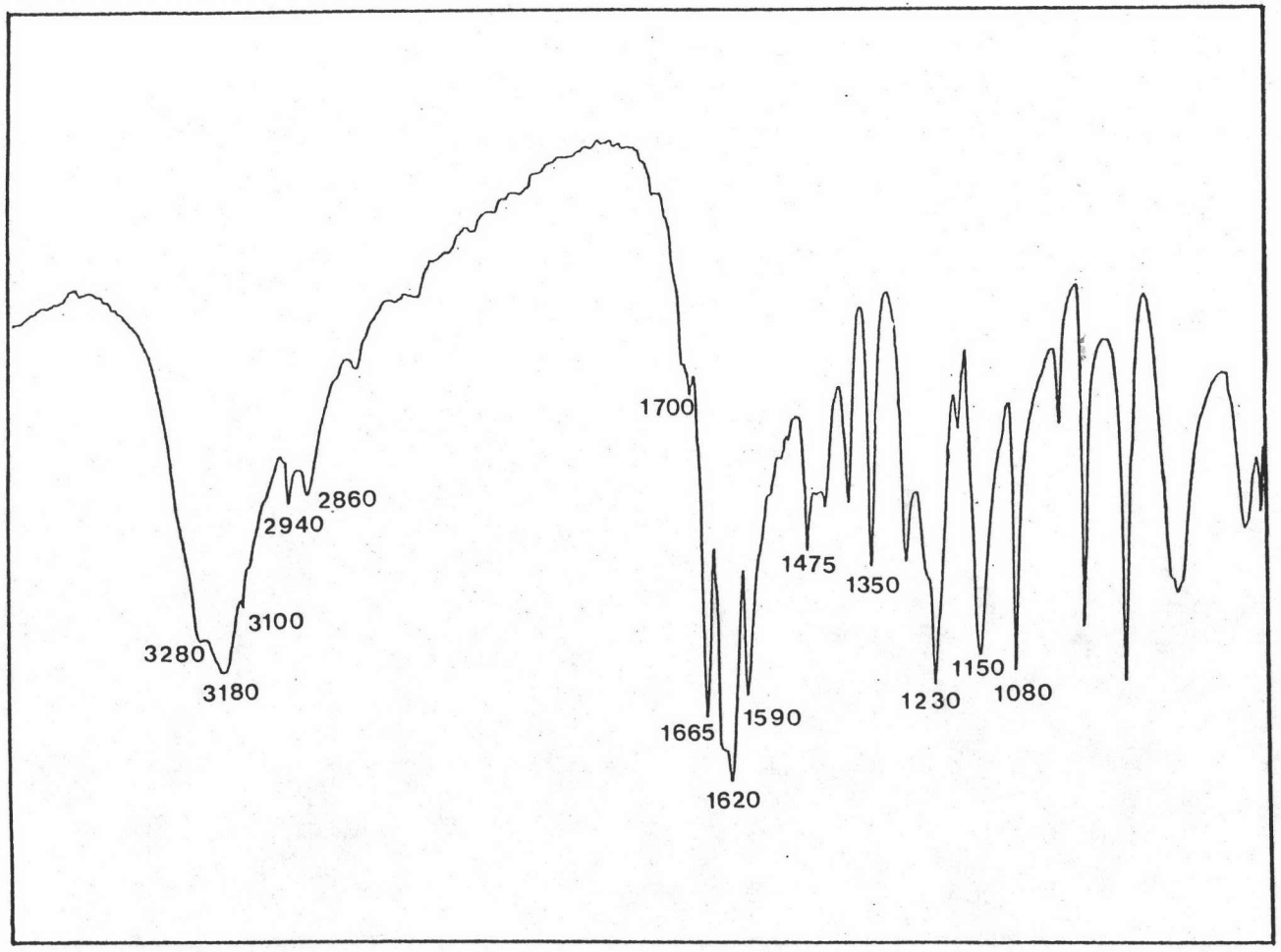

Figure 44 The IR spectrum of Compound 8

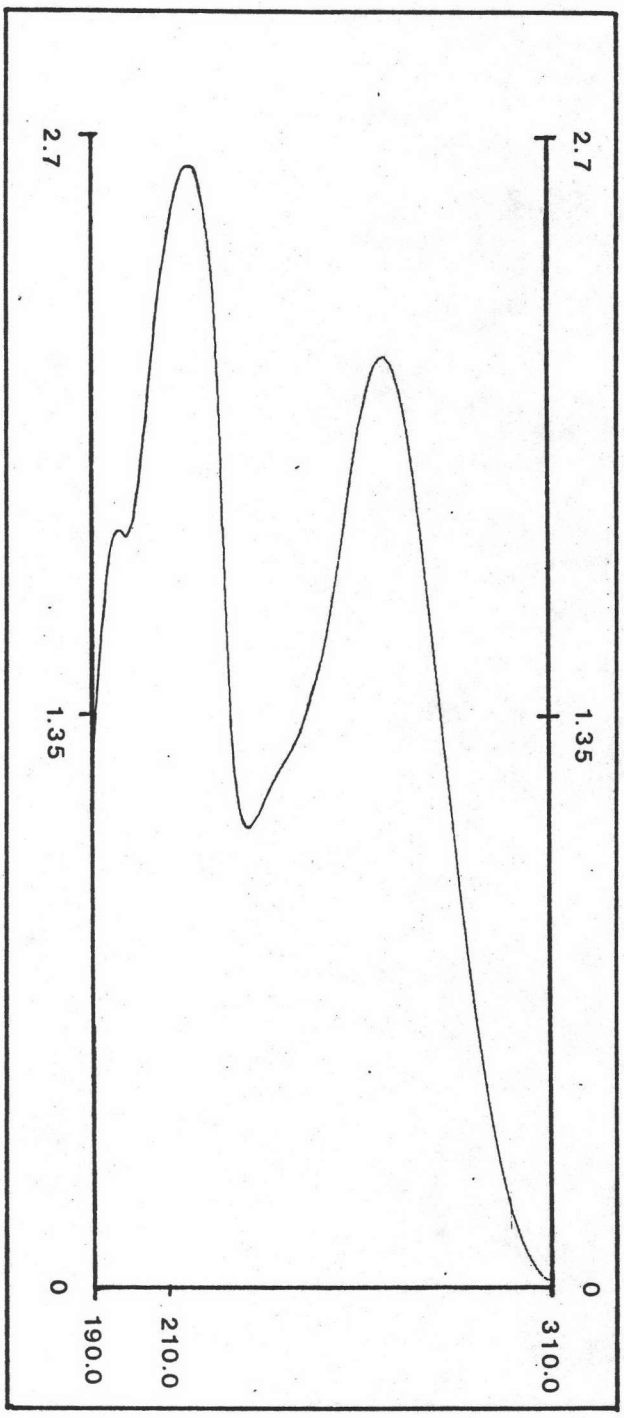

Figure 45 The UV spectrum of Compound 8

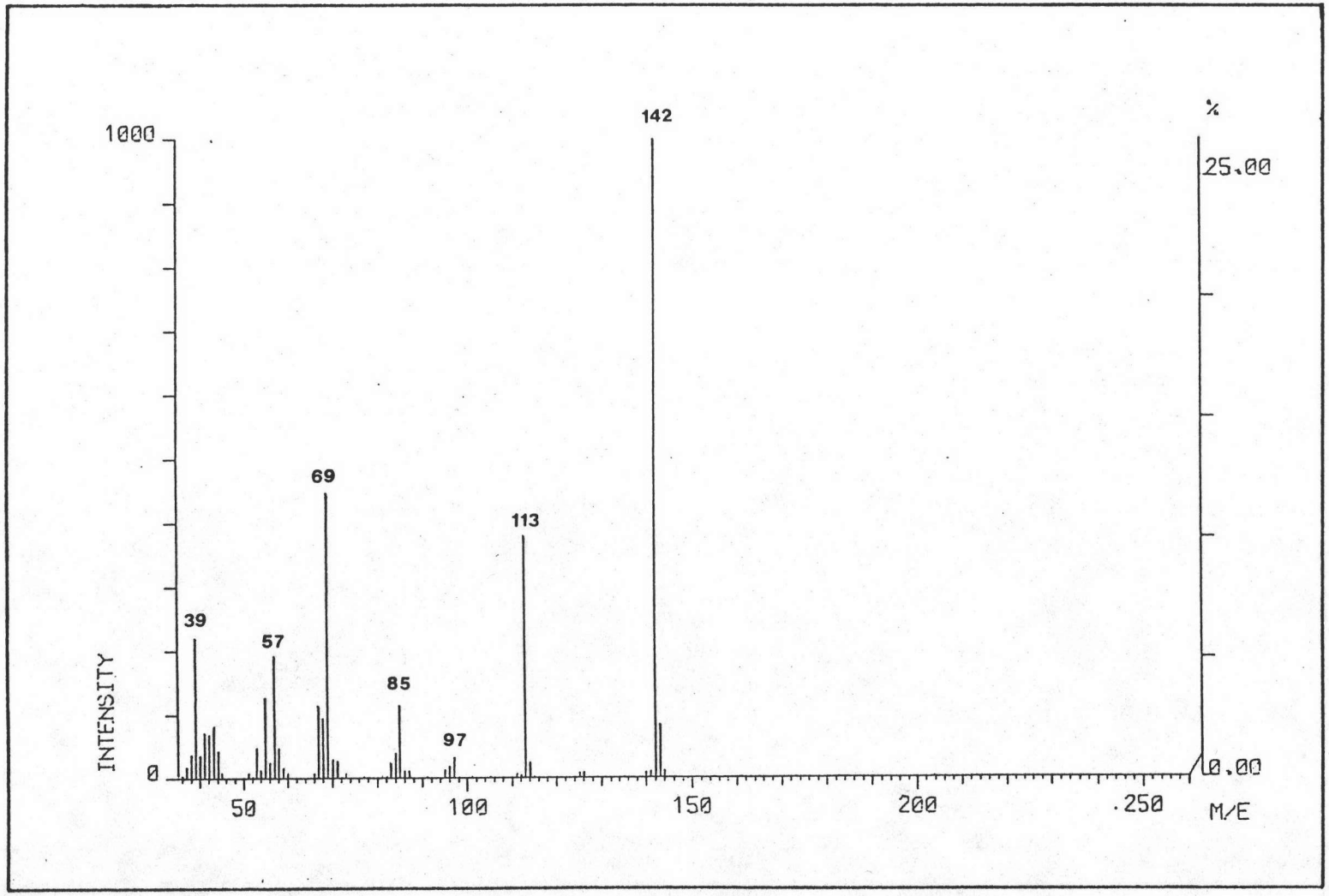

Figure 46 The mass spectrum of Compound 8

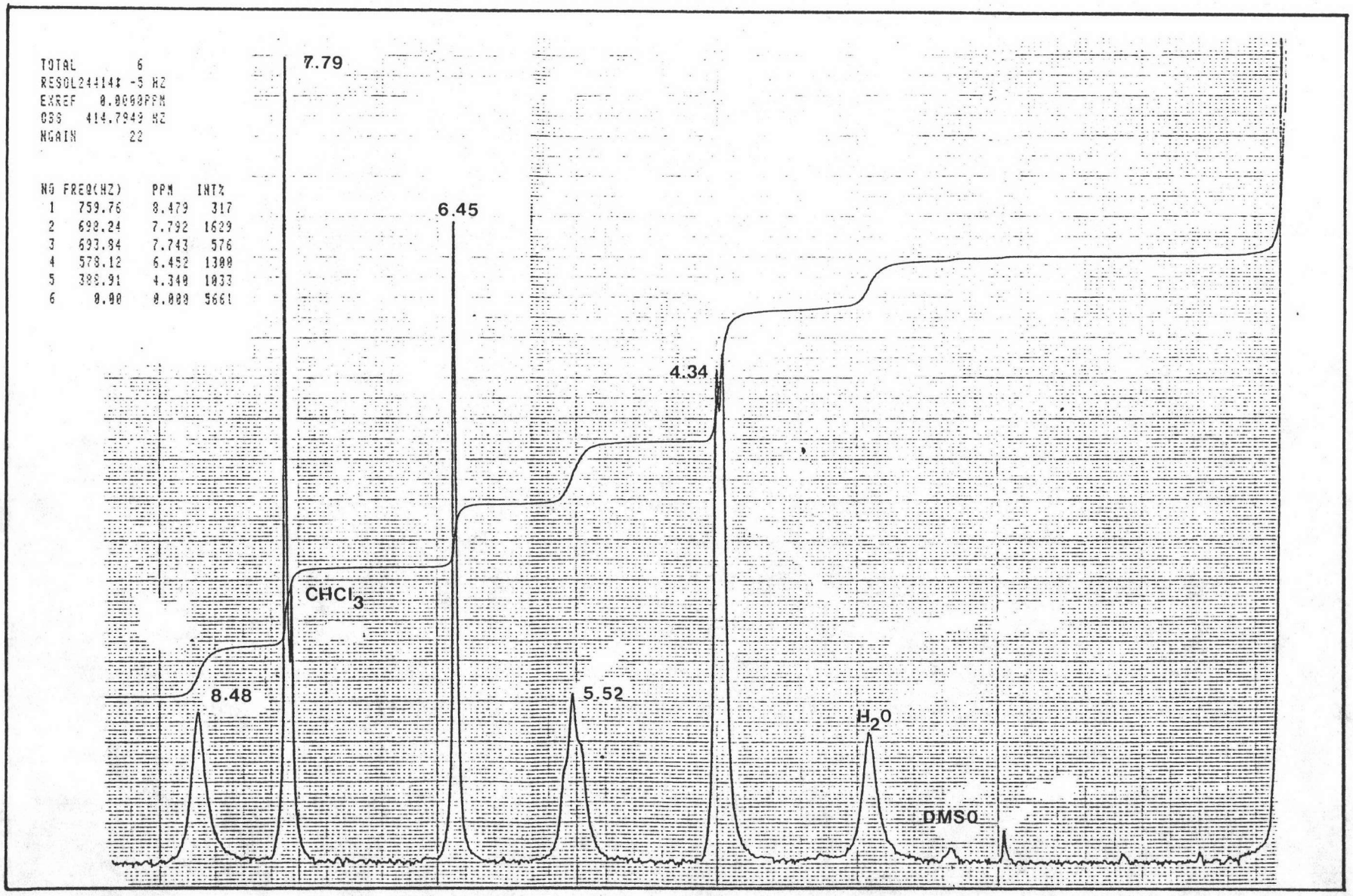

Figure 47 The ^{1}H NMR spectrum of Compound 8

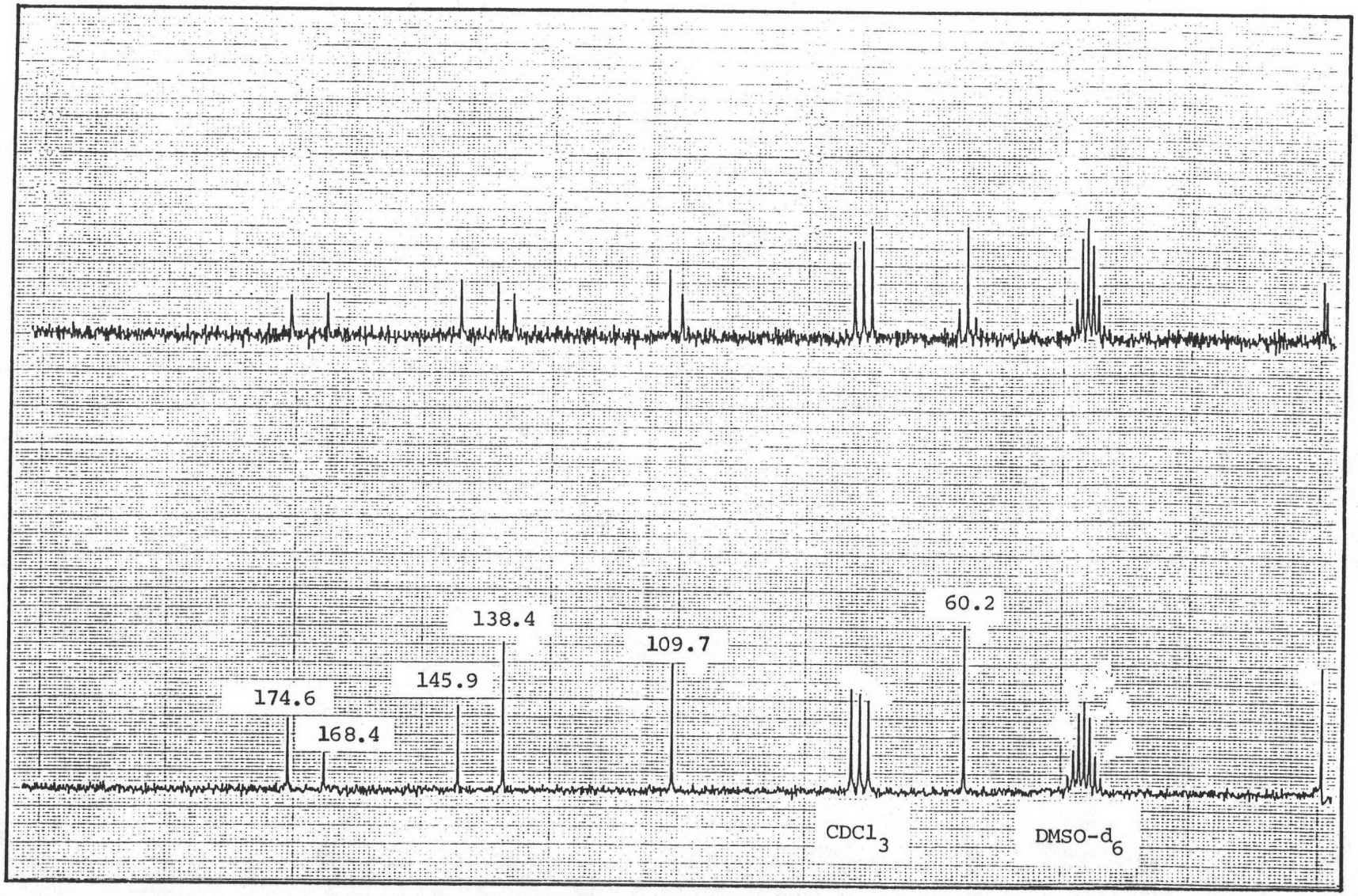

Figure 48 The ^{13}C NMR spectrum of Compound 8

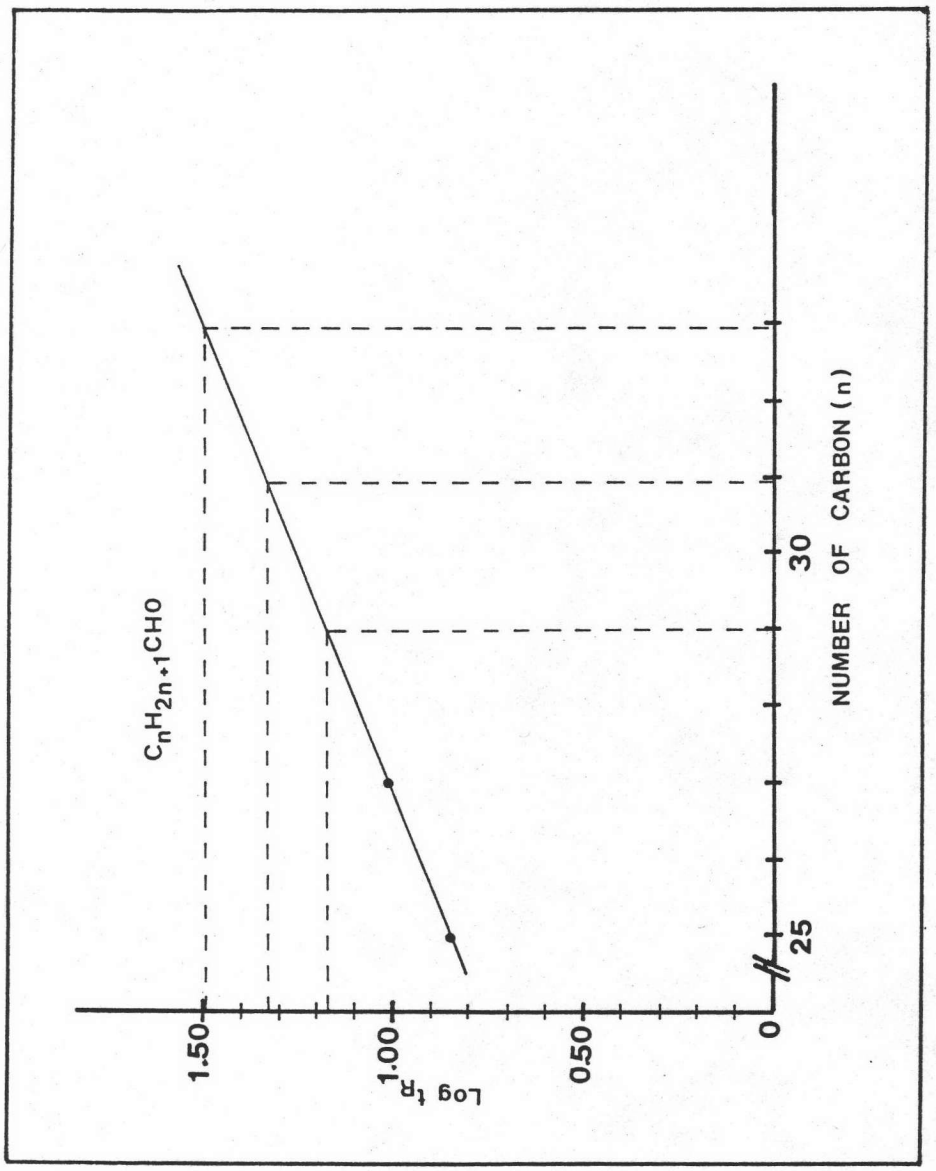

Figure 49 The standard correlation curve of saturated long chain aliphatic aldehydes from Precipitate I and II

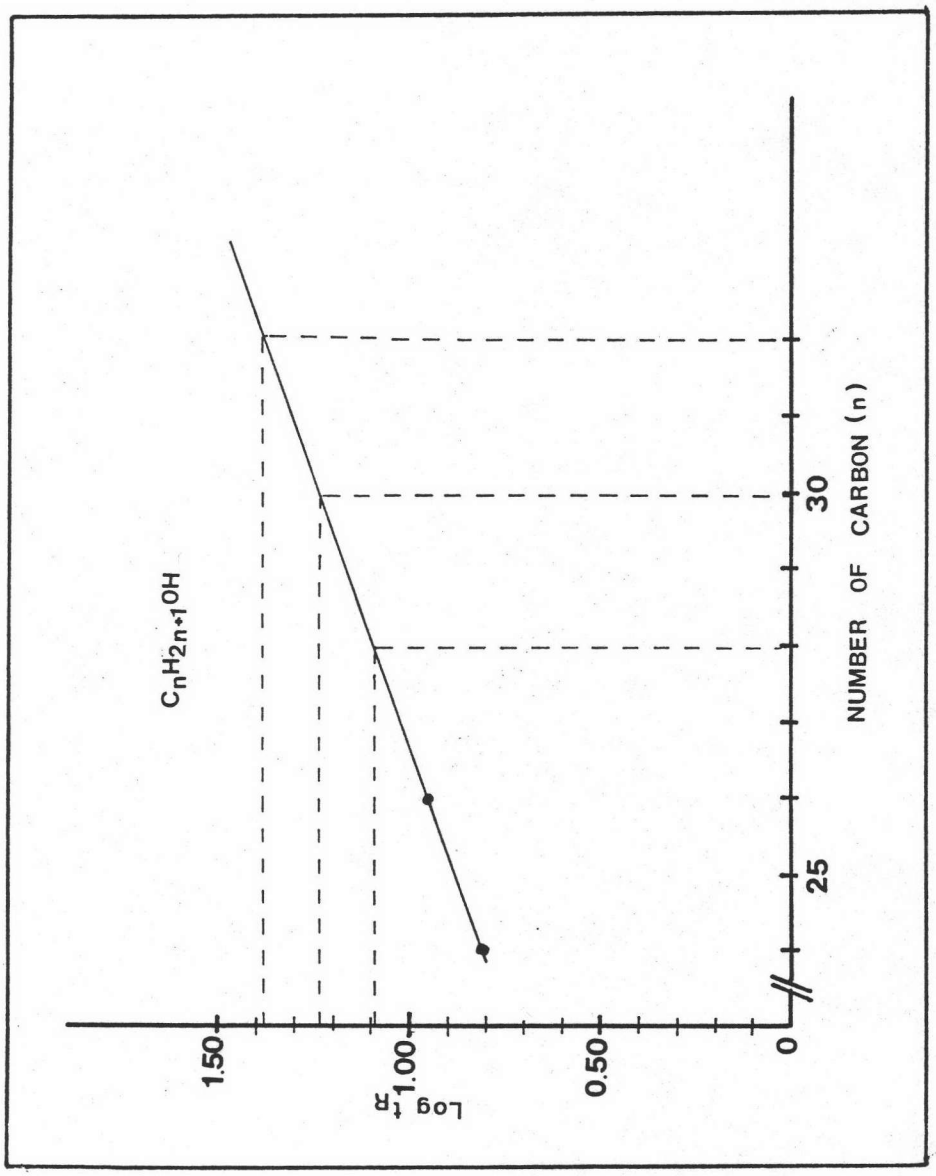

Figure 50 The standard correlation curve of saturated long chain aliphatic alcohols from Precipitate I and II

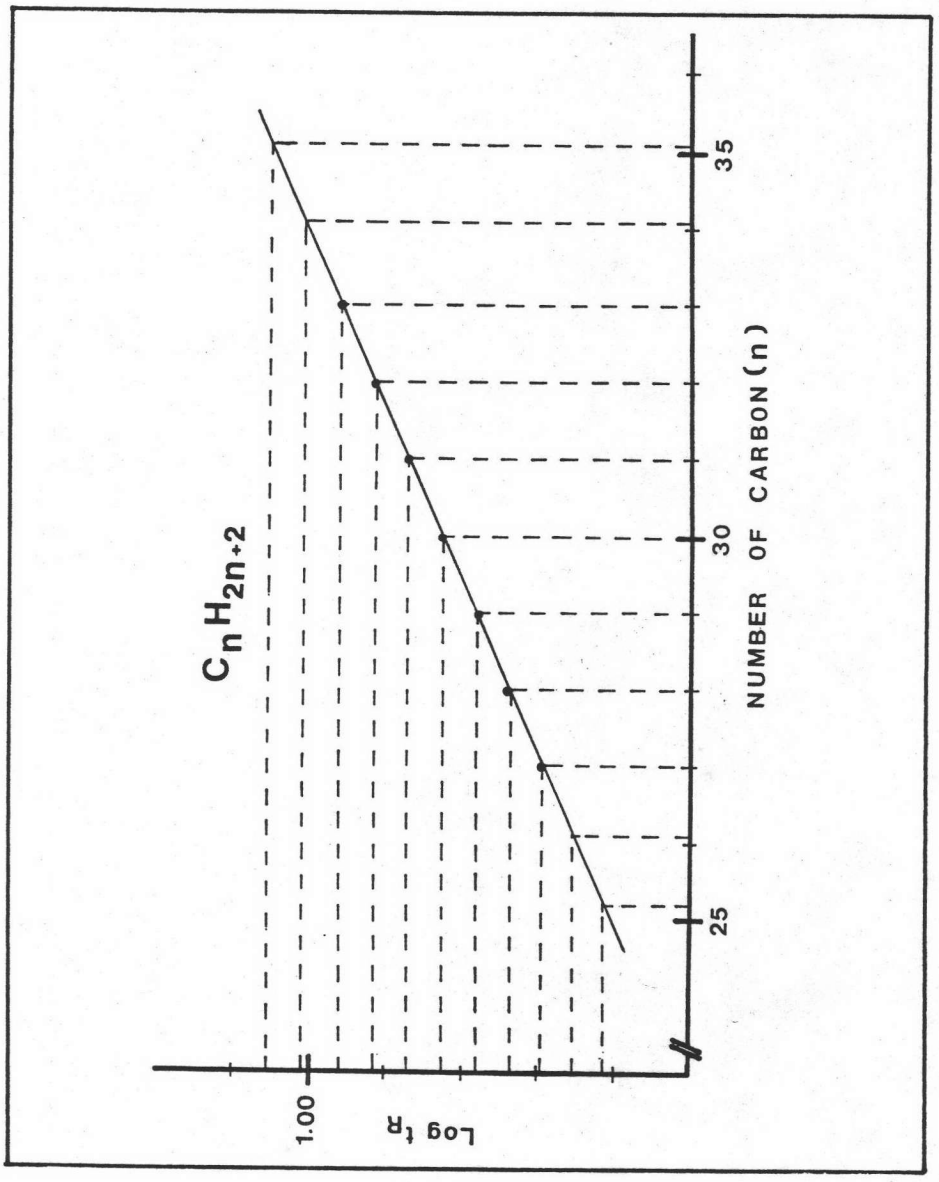

Figure 51 The standard correlation curve of Substance 1 from sugar cane rinds

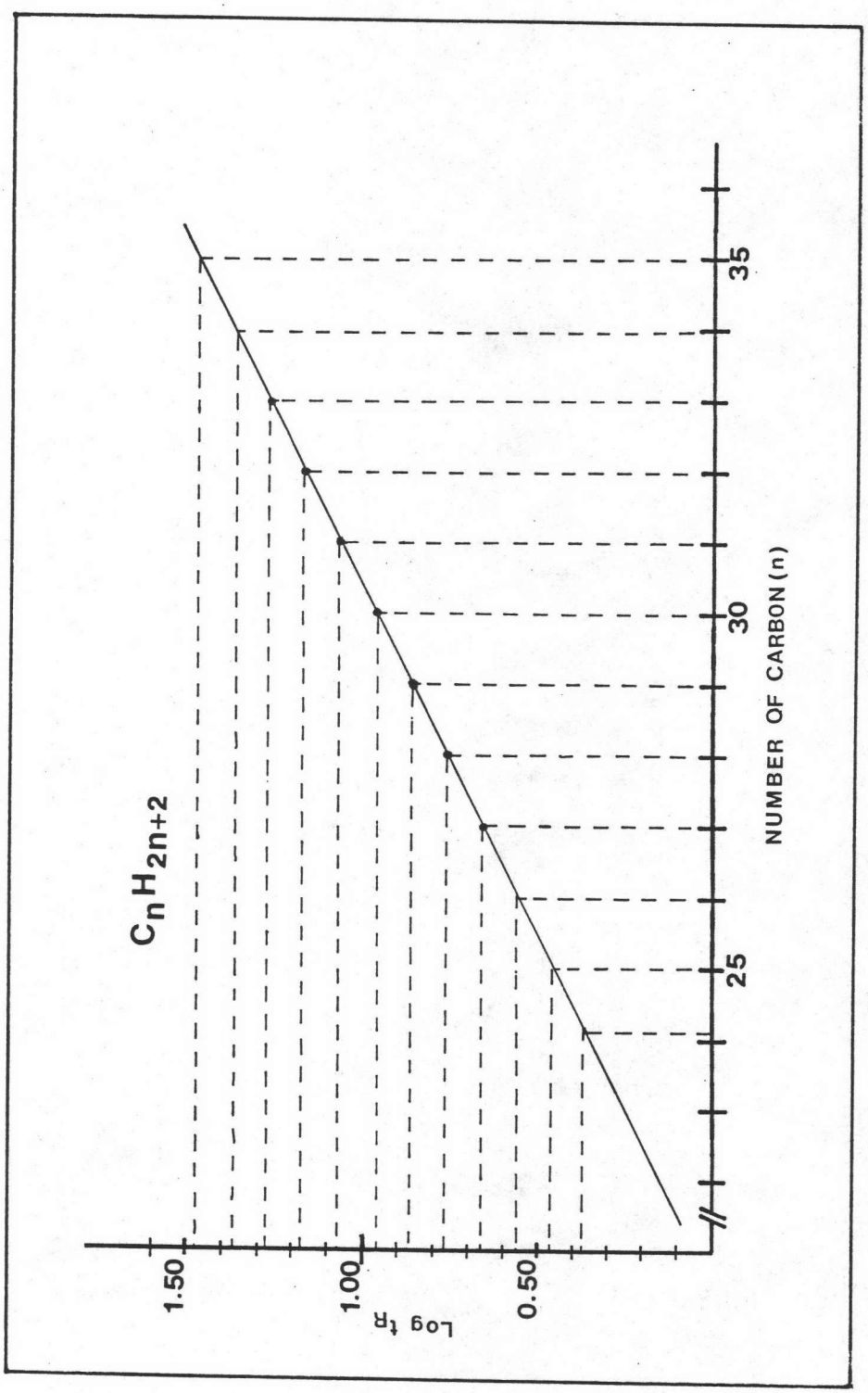

Figure 52 The standard correlation curve of Substance 1 from filter cakes

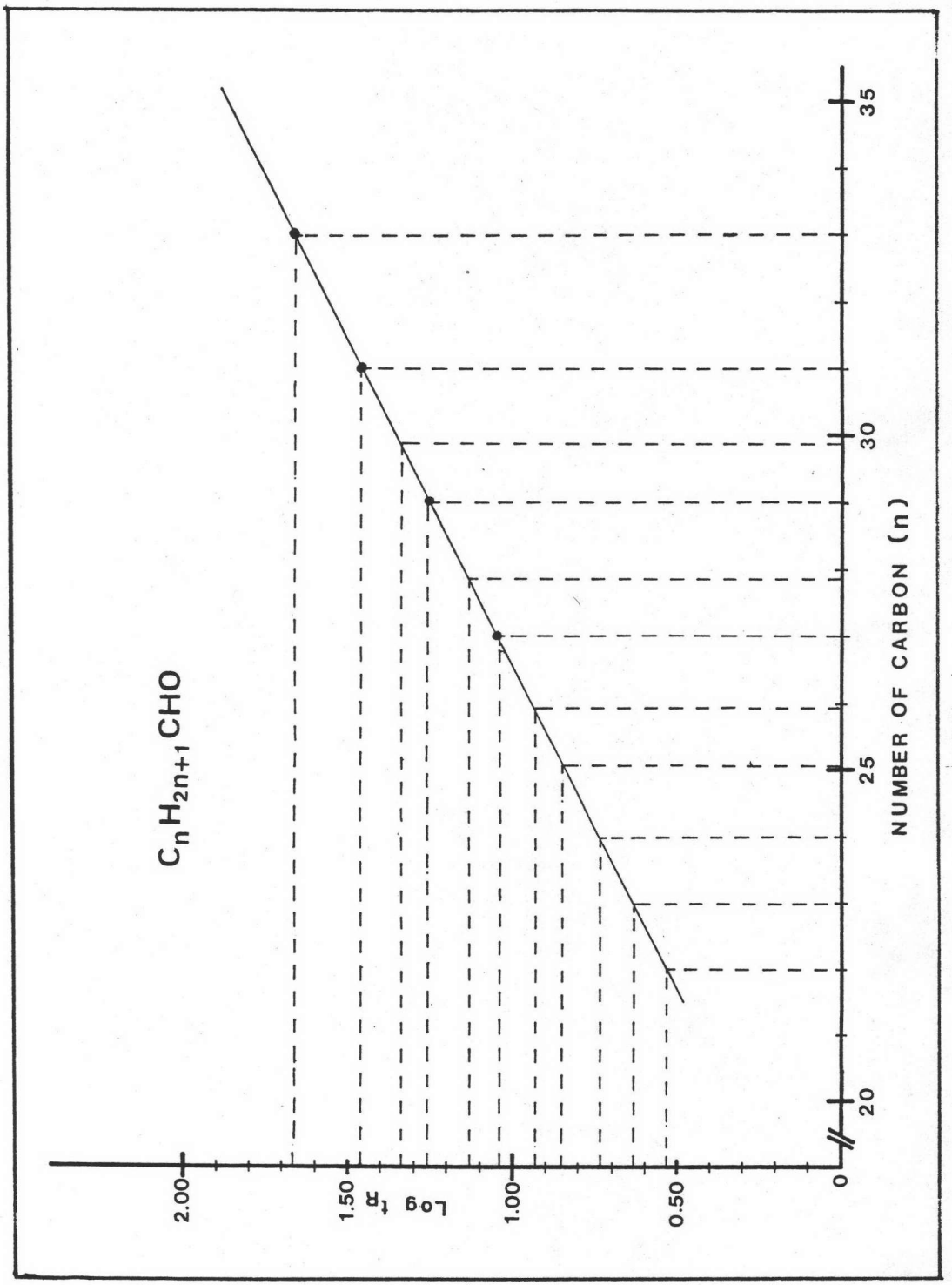

Figure 53 The standard correlation curve of Substance 2 from sugar cane rinds

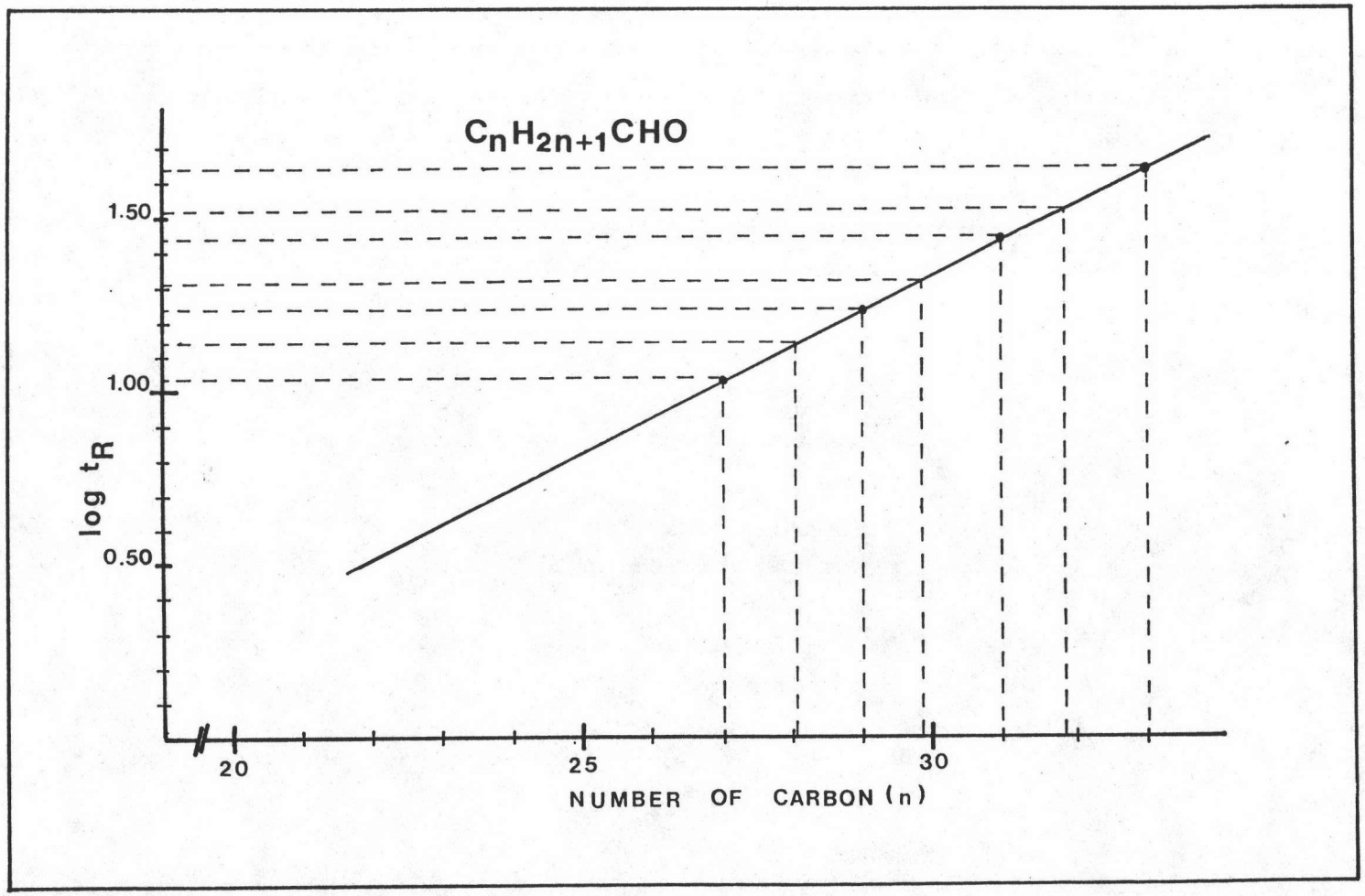

Figure 54 The standard correlation curve of Substance 2
from filter cakes (Mitr Phol and United Farmer&Industry)

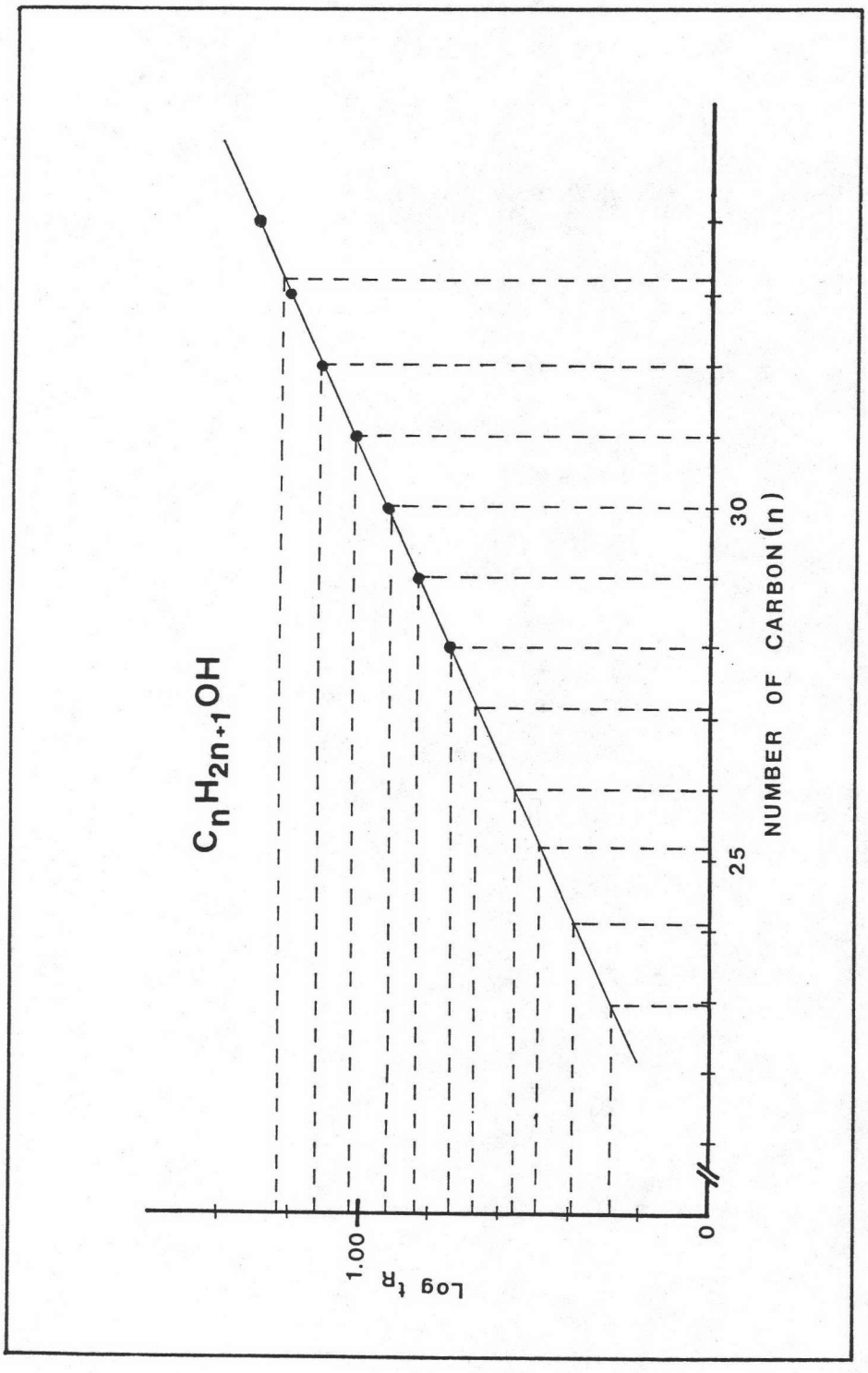

Figure 55 The standard correlation curve of Substance 4 from sugar cane rinds

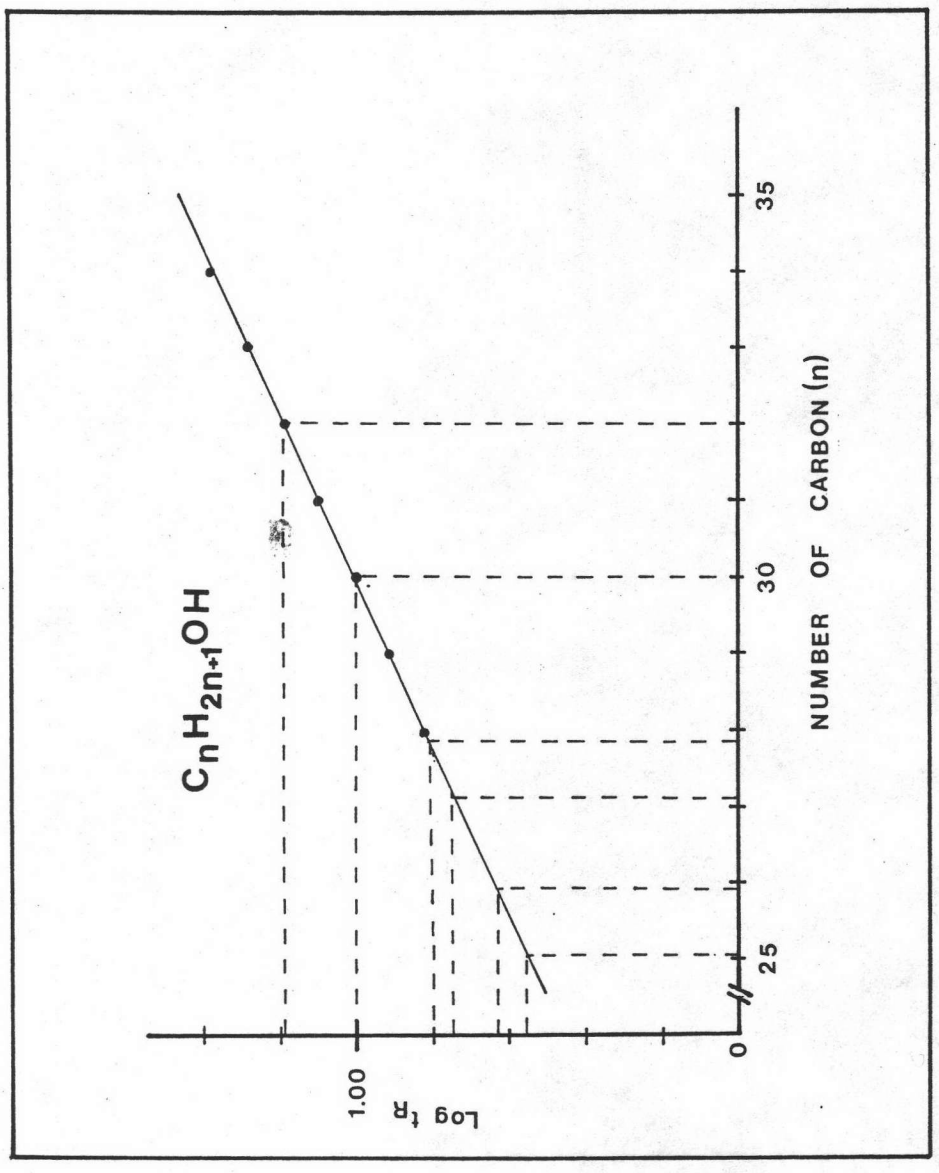

Figure 56 The standard correlation curve of Substance 4 from filter cakes (Khumphawapi)

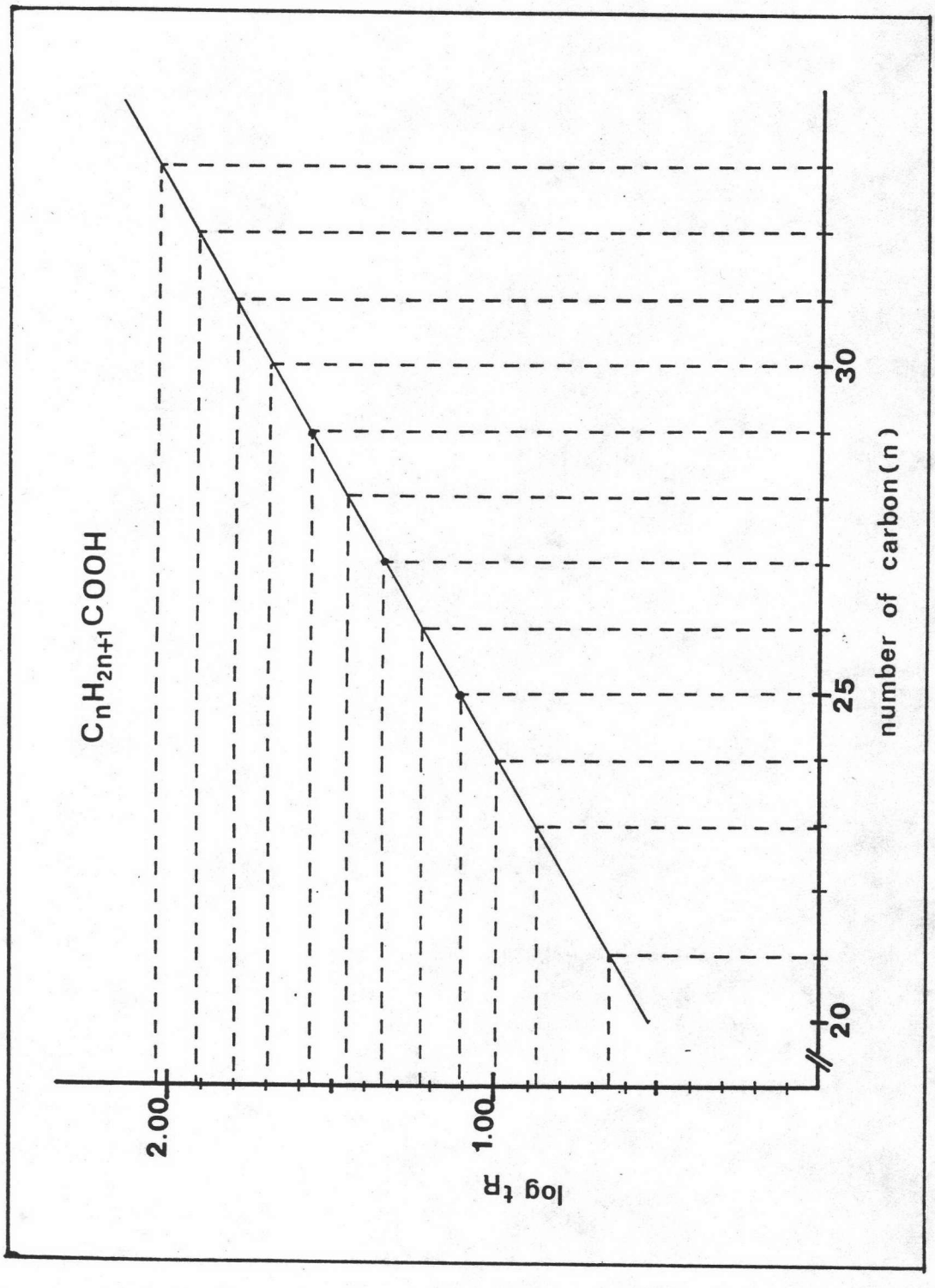

Figure 57 The standard correlation curve of Substance 5 from filter cakes and sugar cane rinds

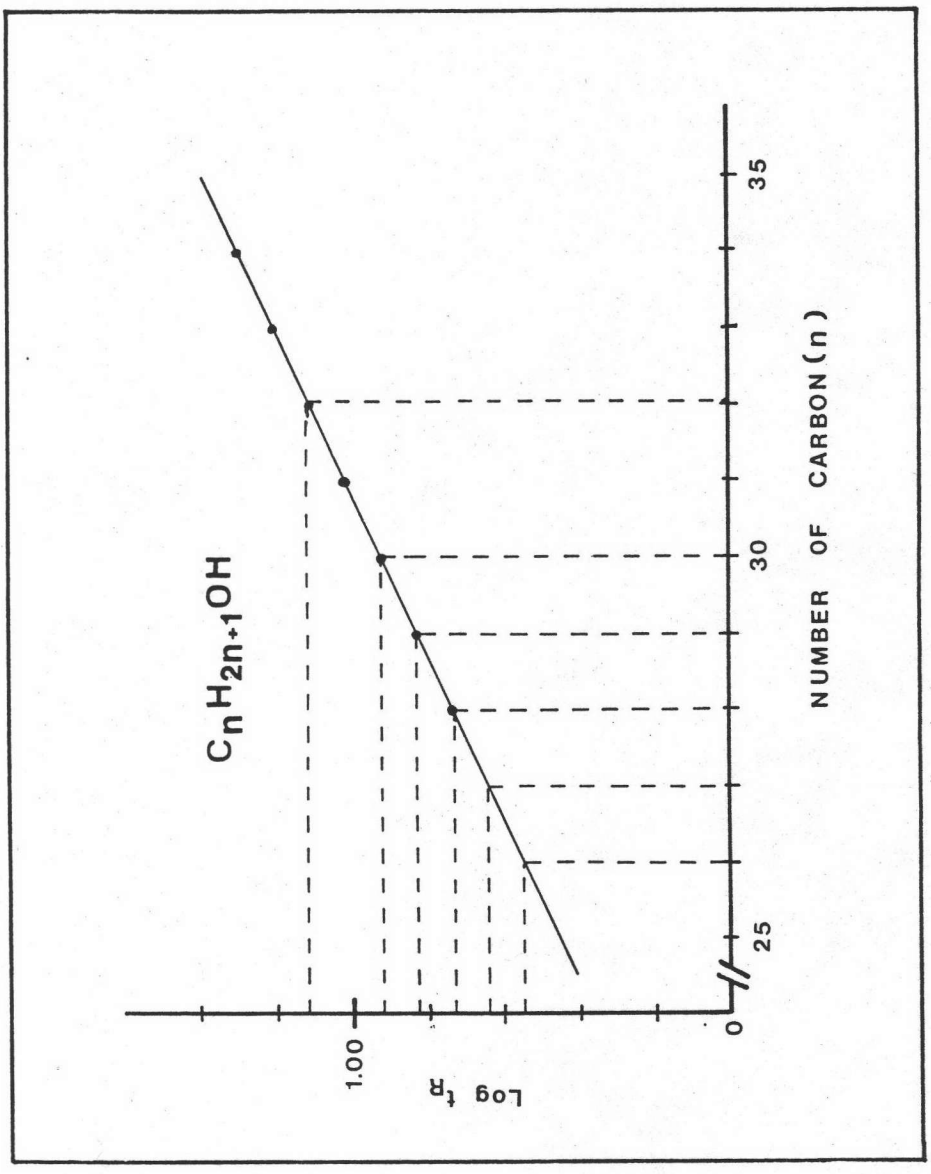

Figure 58 The standard correlation curve of Substance 6

VITA

Miss Viyada Saleechan was born on June 29, 1964 in Bangkok, Thailand. She received the Degree Bachelor of Science (Chemistry) from Chulalongkorn University in 1986. Since 1986, she has been a graduate student studying Organic Chemistry in Chulalongkorn University. She was given by a research grant for her Master degree's thesis from the Graduate School, Chulalongkorn University.