glycylglycine in crystalline form in yields of 70–80 per cent of the theory.

The phthalimidomethylesters of carbobenzoxy-L-leucine, carbobenzoxy-L-proline and carbobenzoxy-β-benzyl-L-aspartic acid have been obtained as oils.

Since the phthalimidomethylesters were resistant to catalytic hydrogenation, I obtained, after reductive decarbobenzoxylation, the phthalimidomethylesters of the afore-mentioned amino-acids, in the form of their crystalline *p*-toluenesulphonates in yields of 80–90 per cent (theoretical).

No racemization was observed during the synthesis of the phthalimidomethylesters of the above-mentioned carbobenzoxy amino-acids and peptides.

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Analysis of Commercially Available Fatty Acids

THE introduction of polyethylene glycol adipate as a stationary phase in gas/liquid chromatography has made possible the separation and identification of the long-chain fatty acids present in such materials as montan wax[1]. This method has also proved useful in assessing the purity of commercially available fatty acids required for work with Langmuir monolayers. The acids were esterified with methanol and sulphuric acid. The esters were recrystallized from methanol, and were analysed chromatographically, using an 18-in. column (10 per cent polyethylene glycol + 1 per cent phosphoric acid on 'Celite') at a temperature of 210° C., with a hydrogen–nitrogen gas mixture (75 : 25) flowing at 25 ml./min. A flame-ionization detector was used. Results of the analysis of a number of commercially available acids are summarized in Table 1.

Several of these acids are sufficiently pure for monolayer work. Higher homologues of adequate purity can be readily obtained by an anodic synthesis with the monomethyl ester of a dibasic acid and stearic or behenic acid.

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Fractionation of Peat Bitumen by Anion-Exchange Chromatography

A BENZENE/ETHANOL (65 : 35) Soxhlet extract of air-dried high-moor peat (bitumen) has been separated into fractions by means of a column of the strongly basic anion-exchange resin 'De-Acidite *FF*' in the acetate form. The resin was converted from the chloride form in the manner described by Logie[1]. The effluent was collected in 2·5 gm. fractions and optical density measurements at 285 mμ were employed for the detection of the eluted fractions.

A cold methanol extract of the solid bitumen from the Soxhlet extraction was added to the anion-exchange column (4 × 1 cm.) and allowed to pass into the resin giving a dark brown band at the surface. The column was then eluted with methanol until the optical density of the effluent had fallen to the low values characteristic of the eluant. Elution was then continued, first with 25 per cent v/v glacial acetic acid in methanol, and then with glacial acetic acid only, until the optical density had, in both cases, fallen to the low values characteristic of the bitumen-free effluent. When the optical density readings of the effluent were high (> 1) a distinct yellowish-brown coloration could be seen visually. This yellow to brown coloration is general for solutions of peat bitumen in organic solvents.

Prolonged elution with each of the solvents did not clear the passage of the dark brown band down the column, although the band probably released the eluted fractions. Another experiment in which a large volume of methanol extract of the bitumen was added to the column resulted in an increase of the band-width with continued addition of the extract. This was probably due to the expenditure of the ion-exchange capacity higher up the column.

It was also observed that elution of the column containing the methanol extract of bitumen with 1 per cent diethylamine in ethanol, prior to elution with the above solvents, did not release any material absorbing at 285 mμ.

Table 1. ANALYSIS OF THE METHYL ESTERS OF COMMERCIALLY AVAILABLE FATTY ACIDS

	Carbon No.	Melting point (° C.) Found	Melting point (° C.) Expected (ref. 2)	Weight (per cent) of methyl ester of the acid with carbon number 16	18	20	21	22	23	24	26	28	30
Acid supplier *A*:													
Stearic, 99 per cent	18	67	69·6	2·6	94·7	2·0		0·7					
Arachidic, tech.	20	70	73·35		0·8	42·4	1·0	54·8		1·0			
Behenic, 90 per cent	22	68–70	79·95		7·0	14·0		77·7		1·3			
Lignoceric	24	82	84·15					2·6		97·4			
Cerotic	26	84–84·5	87·7							2·8	97·2		
Acid supplier *B*:													
Stearic, 99 per cent	18	69·5–70	69·6		> 99·9								
Arachidic, synth.	20	75·5–76	75·35			100							
Behenic	22	77	79·95			3·3		96·7					
Lignoceric	24	82–82·5	84·15	Trace	Trace	Trace		5·9	Trace	90·8	3·3		
Cerotic, synth.	26	86·5–87	87·7								100		
Montanic, puriss. synth.	28	89	90·9									100	
Melissic, puriss. synth.	30	91·5	93·6									11·2	88·8