was 1·5 mgm./hr. of acetic acid per gm. of polyvinyl acetate. This rate of acetic acid evolution decreased with time without impairing the efficiency of the column. In all studies the base line drift was less than ±·02 mV. The infra-red spectra of the products collected at 230°C. over a 12-hr. period indicated the presence of acetic acid only. Thus, if the fatty acid methyl esters separated by the use of a polyvinyl acetate column are collected for further study, any trace impurities from the column can be readily removed, or easily compensated for in spectrophotometric studies.

The results reported in Table 1 were obtained using a polyvinyl acetate polymer of a rather low degree of polymerization with a molecular weight of approximately 1500. Similar results were obtained with a polyvinyl acetate polymer of molecular weight of approximately 23,000.

TABLE 1

Compound	Retention vol. (ml.)*
Methyl palmitate	1080
Methyl stearate	1860
Methyl oleate	2100
Methyl linoleate	2350
Methyl linolenate	2750
Methyl arachidonate	5230

* Retention volumes calculated for a flow-rate of 83 ml./min. and measured from the time of emergence of the solvent phase.

An 8-ft. coiled copper column, ¼ in. outside diameter and wall thickness 0·03 in., was used. The partition medium consisted of 15 per cent polyvinyl acetate, designated as 'Vinylite *AYAC*'[5], of a molecular weight of approximately 1500 on 'Chromosorb', 30–60 mesh[6]. The column packing was prepared by slurrying the 'Chromosorb' with a 10 per cent solution of the polymer dissolved in acetone. The acetone was evaporated at room temperature and stray volatile materials removed by heating in a vacuum oven at 130°C. The gas chromatograph was a commercial model[7] provided with a 1-mV., 1-sec. full-scale strip-chart recorder[8]. The detector was a 4-filament thermal conductivity unit. The helium flow rate was 83 ml./min. measured at the column exit and at room temperature. The column and cell temperature was 205°C. The pressure drop across the column was 30 p.s.i.g. Two mgm. of each methyl ester were dissolved in petroleum ether (b.p. 37°) and a 5-μl. sample injected into the column. Values for methyl palmitate and methyl arachidonate are included in Table 1 for comparative purposes.

Quantitative estimation of the fatty acid esters within ±5 per cent could be made by measuring the peak areas and comparing these values with those obtained from known amounts of the pure methyl esters.

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IRWIN HORNSTEIN
L. E. ELLIOTT
P. F. CROWE

Meat Laboratory,
Eastern Utilization Research and
Development Division,
United States Department of Agriculture,
Beltsville, Maryland.

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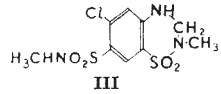
[5] Union Carbide and Carbon Corp., Bakelite Division, New York, New York.
[6] Johns-Mansville, Celite Division, New York, New York.
[7] A Beckman GC-2 gas chromatograph was used.
[8] The recorder was manufactured by Minneapolis-Honeywell, Brown Instrument Division, Philadelphia, Pennsylvania.

Sulphonamides with Diuretic Activity

RECENTLY we have reported that sulphonamides with a substituted amido-group that is, compounds deprived of any inhibitory action on carbonic anhydrase, may possess a high diuretic activity[1]. The most active compound of the series is 4-amino-6-chloro-benzene-1,3-disulphonmethylamide (I).

In the meantime cyclic compounds with a free sulphonamido-group, for example, 6-chloro-7-sulphamyl-3, 4-dihydro-1, 2, 4-benzothiadiazine-1, 1-dioxide (II), have received attention[2].

It seemed therefore interesting to us to bring about ring-closure with formaldehyde in compound (I), and 6-chloro-7-methylsulphonamide-3, 4-dihydro-2, N-methyl-1, 2, 4-benzothiadiazine-1, 1-dioxide (III) was obtained.



III

m.p. = 202–203°

(Anal. calc. for $C_9H_{11}ClN_3O_4S_3$: C, 33·28; H, 3·71; N, 12·81; S, 19·68; found: C, 33·20; H, 3·88; N, 12·62; S, 19·87)

The diuretic activity of compound (III) is of the same magnitude as that developed by (II) although it does not present an inhibitory action on carbonic anhydrase. Furthermore in low dosages it is possible to provoke diuretic activity much more pronounced than that observed with compound (I).

On the other hand between compounds (II) and (III) there exist considerable differences. While the diuresis promoted by (II) is a rapid phenomenon and the activity decreases after a short time, diuresis promoted by compound (III) is milder and more prolonged. Moreover (III) proves to possess a lower toxicity than (II): (DL_{50} intrap. in rats: (II) = 800 mgm./kgm.; (III) = 1,670 mgm./kgm.).

W. LOGEMANN
P. N. GIRALDI
Chemical Research Laboratory,
M. A. PARENTI
Biological Research Laboratory,
Istituto 'Carlo Erba' per Ricerche Terapeutiche,
Milano.

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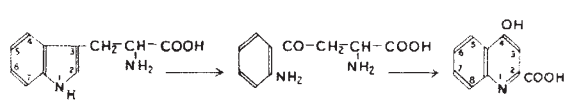
Specificity of the Tryptophan Peroxidase-Oxidase Enzyme System

THE conversion of tryptophan to kynurenic acid has been demonstrated in most mammals[1,2].



The formation of kynurenine (via formyl-kynurenine), is catalysed by a coupled peroxidase-oxidase system which is regarded by Hayaishi[3] and others, from *in vitro* experiments, as being highly specific for L-tryptophan.