

## LETTERS TO THE EDITOR

### Further Observations on the "Ninhydrin-reacting" Hydrolytic Fragment of Vitamin B<sub>12</sub>.

SIR,—In the course of experiments on the nature of the "ninhydrin-reacting" hydrolytic fragment of vitamin B<sub>12</sub>, Ellis, Petrow, and Snook<sup>1</sup> compared its behaviour with that of 2-aminopropanol on unidimensional paper chromatograms, and observed that the two substances had identical partition coefficients in four different solvent systems. They accordingly drew the conclusion that the two compounds may be identical, but pointed out that a final decision must rest on a rigid chemical comparison. Billman, *et al.*<sup>2</sup> have recently reported on the facile conversion of 2-aminoalcohols into the corresponding aminoacids by means of acid potassium permanganate. Accordingly we have examined the oxidation of microgram quantities of authentic 2-aminoalcohols with acid potassium permanganate, followed by chromatography of the oxidation products and development with the ninhydrin reagent. Very satisfactory results were obtained, the corresponding aminoacids being obtained and unambiguously identified in every instance. 2-aminopropanol, for example, giving alanine. Oxidation of the "ninhydrin-reacting" fragment of vitamin B<sub>12</sub>, after its chromatographic separation from components  $\alpha$ -,  $\beta$ - and  $\gamma$  and subsequent elution from the paper<sup>3</sup>, was carried out employing the same technique, and the product examined by paper chromatography using *n*-butyl alcohol/acetic acid and *isobutyric* acid as the irrigation solvents. Treatment of each of the chromatograms with ninhydrin gave rise to the appearance of only one spot which did not correspond in position with that of alanine and was, moreover, bright yellow in colour, slowly changing to purple after *ca.* 3 hours at room temperature. It was not identical with either proline or hydroxyproline.

The "ninhydrin-reacting" fragment and 2-aminopropanol represent the only instance, to our knowledge, of different compounds which cannot be distinguished from each other on replicate chromatograms irrigated with as many as four different solvent systems. Such cases must indeed be rare but serve to emphasise that chromatographic studies, *per se*, may not be sufficient for identification unless supported by collateral evidence of a chemical character.

The authors thank the Directors of The British Drug Houses Ltd. for permission to publish these results.

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December 20, 1949.

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#### REFERENCES

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