The spectrum of an aqueous solution of this compound showed: broad band at 2700–2770 Å. ($E^{1\%}_{1\,\mathrm{cm.}}$ 137); 3150 Å. ($E^{1\%}_{1\,\mathrm{cm.}}$ 80); 3525 Å. ($E^{1\%}_{1\,\mathrm{cm.}}$ 150); 4150 Å. ($E^{1\%}_{1\,\mathrm{cm.}}$ 29); 5300 Å. ($E^{1\%}_{1\,\mathrm{cm.}}$ 58). This spectrum is similar to but different from that of vitamin B_{12}.[2] In artificial mixtures, the presence of about 10% B_{12} in B_{12a} is recognizable in the spectrum; about 30% B_{12a} in B_{12} is not easily discernible.

This new and biologically active crystalline compound is designated vitamin B_{12a}.

Vitamin B_{12a} shows an activity[1b] of about 5.2 × 10 u./mg. for the growth of *L. lactis* and 1–3 × 10^6 u./mg. for *L. leichmanii*, and about one-half the "animal protein factor" activity[1c] of B_{12} in rats[3] and 30 ± 15% of B_{12} activity[1d] in chicks.[4]

Dr. Randolph West[5] tested 25 µg. of vitamin B_{12a} parenterally in a single pernicious anemia patient and observed about 30% of a maximal hematological response.

[2] Brink, Wolf, Kaczka, Rickes, Koniuszy, Wood and Folkers, THIS JOURNAL, in press.

[3] Emerson, *Proc. Soc. Exp. Biol. Med.*, in press.

[4] Ott, Rickes and Wood, *J. Biol. Chem.*, **174**, 1047 (1948).

[5] Columbia University, personal communication.

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THE PROMOTER EFFECT OF PLATINIC CHLORIDE ON RANEY NICKEL

Sir:

In 1936, Lieber and Smith[1] found that small amounts of platinic chloride, added to Raney nickel catalyst just prior to the start of the reduction, produced a marked enhancing effect on the activity of the catalyst. Since this early investigation there has been a marked enhancement in the activity of Raney nickel catalyst itself due to improvements in the procedure for the preparation of the catalyst from the Raney nickel–aluminum alloy[2a] over that of the method[2b] used in (1). Accordingly, it was considered important to investigate the promoter effect on the improved types of Raney nickel, particularly that designated as "W-6".[2a]

Following the procedure of Adkins and Billica,[2a] we have been unable to duplicate the activity reported by them for W-6, but are in agreement that it is the "most active nickel catalyst known".[2a] Comparative hydrogenations were carried out at room temperature under a pressure of 45 p. s. i. in a 250-ml. glass bottle shaken at about 190 oscillations per minute. The reaction mixture (containing 0.05 mole hydrogen acceptor, except where noted) was made up to a volume of 100 ml. with dry ethanol and contained 3 g. of wet W-6 Raney nickel.

Using 0.220 millimole of platinic chloride we have found *very marked* promoting actions for the hydrogenation of the nitro-, aldehyde and the nitrile groups, the ketone group being completely poisoned. The promoting action of triethylamine on W-6 alone, for the carbonyl function, as noted by Adkins[2a] was confirmed, but more significantly the combination of triethylamine and platinic chloride *produced promotions far exceeding any activity previously known*, and manifesting itself at *incredibly low concentrations of platinic chloride.* This is illustrated by the following data for the hydrogenation of benzaldehyde to benzyl alcohol

	Time, minutes
W-6 alone	170
W-6 plus 0.220 m.mol $PtCl_4$	17
W-6 plus Et_3N[a]	60
W-6 plus Et_3N plus 0.220 m.mol $PtCl_4$	6[b]
W-6 plus Et_3N plus 0.026 m.mol $PtCl_4$	7
W-6 plus Et_3N plus 0.004 m.mol $PtCl_4$	13
W-6 plus Et_3N plus 0.002 m.mol $PtCl_4$[c]	29

[a] 2 ml. triethylamine added. [b] Check runs have given low as three to four minutes. [c] Corresponds to 0.4 mg. Pt.

Moreover the combination of triethylamine plus platinic chloride enables the hydrogenation of acetone to proceed rapidly. We have also noted the formation of triethylamine chloroplatinate prior to the start of the reduction and we will investigate the promoter action of aminochloroplatinates as promoters. Further, the combination of triethylamine plus platinic chloride was found to *markedly* promote the hydrogenation of other functional groups as well as the carbonyl group.

Further studies are under way and will be the subject of more complete reports.

[1] E. Lieber and G. B. L. Smith, THIS JOURNAL, **58**, 1417 (1936).

[2] (a) H. Adkins and H. R. Billica, *ibid.*, **70**, 695 (1948); (b) H. Adkins and L. W. Covert, *ibid.*, **54**, 4116 (1932).

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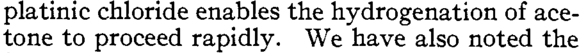
RECEIVED FEBRUARY 25, 1949

THE APPLICATION OF THE CURTIUS REACTION TO THE POLYMERIZATION OF TRIGLYCINE

Sir:

In attempts to develop procedures for the preparation of complex peptides of the general structure (I)



$$H_2N—(\overset{X}{\overset{|}{C}}H—CO—NH—\overset{Y}{\overset{|}{C}}H—CO—NH—\overset{Z}{\overset{|}{C}}H)_n—COOH$$

(I)

where X, Y, and Z represent side chains found in naturally occurring amino acids, we have as a model experiment investigated the polymerization of a triglycine unit derived from triglycine hydrazide dihydrochloride (II)

$$H_2N—(R)—CONHNH_2\cdot 2HCl$$

(II)

$$R = (—CH_2—CO—NH—CH_2—CO—NH—CH_2—)$$