more probable that the difference is due to a slightly different spectrophotometric technique and the use of different instruments.

Since the high-melting vitamin A alcohol and the crystalline palmitate present possibilities for biological research and the standardization of vitamin A preparations, it is important that their stability under various conditions be known. We have made preliminary storage tests on the palmitate, distilled esters from a fish-liver oil, vitamin A 2-naphthoate (kindly supplied by Dr. T. H. Mead) and beta carotene, the present international standard, and found that they are equally stable in refined cottonseed oil at comparable concentrations when exposed to air in the dark. The crystalline vitamin A palmitate decays more rapidly than the naphthoate on exposure to air. It is hoped to make a further report on the stability of these materials.

A preliminary biological assay of the crystalline vitamin A alcohol has shown that its potency is greater than 2,700,000 U.S.P. units per gram. It is planned to determine the biological potency of both crystalline vitamin A alcohol and crystalline vitamin A palmitate as precisely as possible. The results will be reported separately.

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THE EFFECT OF SALICYLATE ON THE OXYGEN UPTAKE OF THE TUBERCLE BACILLUS

UNLIKE most other bacteria the tubercle bacillus does not readily oxidize carbohydrates, amino acids, hydroxy acids, etc., when these substances are added to suspensions in the Warburg apparatus. As shown in Fig. 1, the addition of 1.0 mg of sodium salicylate (o-hydroxybenzoate) to the bacteria suspended in 2.0 cc of M/20 phosphate buffer pH 6.7 more than doubles the oxygen uptake. A corresponding increase in CO_2 production also occurs. The bovine strain B_1 was used. It was grown on beef glycerine infusion broth and the floating masses were removed with a loop and suspended in sterile saline in Hopkins tubes. These were then centrifuged at 2,000 r.p.m. for 15 minutes and the saline replaced by sterile buffer, so that 0.1–0.2 cc of the packed bacteria were suspended in 1.0 cc of buffer. A glass rod the diameter of which was just smaller than the narrow part of the Hopkins tube broke up the cell masses and gave an even suspension. Fig. 1 shows that benzoate also has an effect on the oxygen uptake. On the other hand, p- and m-hydroxybenzoates and methyl salicylate are without action, as is acetylsalicylate until the acetyl group has been hydrolyzed off. p-aminobenzoate has no action and

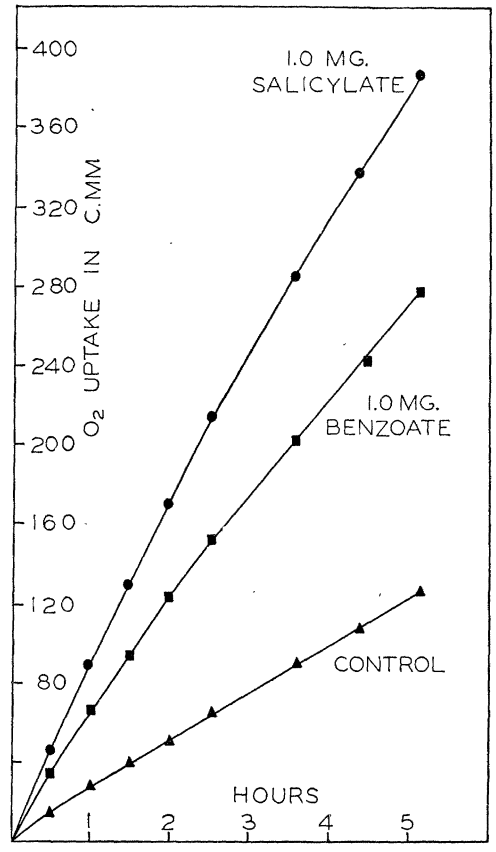

FIG. 1. The oxygen uptake of 0.5 cc of the suspension of tubercle bacilli alone and with salicylate and benzoate at pH 6.7 and 37° C.

o-aminobenzoate only a slight one, but when the latter is added with salicylate it inhibits the salicylate effect. o-aminosulfonic acids have not yet been tried.

When 0.1–0.2 mg of salicylate is used the oxygen uptake is proportional to the concentration, indicating that the salicylate is being oxidized as a substrate. No definite end-points were obtained. The results do not prove that salicylate is a normal metabolite of the tubercle bacillus but suggest that it or compounds of similar configuration may be important. The fact that p-aminobenzoate has been shown to be a metabolite of certain streptococci[1] indicates that substituted benzoates may play a part in bacterial metabolism.

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NORNICOTINE AS THE PREDOMINATING ALKALOID IN CERTAIN TOBACCOS

NICOTINE has long been considered the main alkaloid of *Nicotiana tabacum*, ordinary tobacco. This view is based upon the finding of Pictet and Rotschy,[1] in 1901, that only 2.5 per cent. of the total tobacco

[1] D. D. Woods, *Brit. Jour. Exp. Path.*, 21: 74, 1940.
[1] Amé Pictet and A. Rotschy, [Paris] *Acad. des Sci. Compt. Rend.*, 132, 971–2, 1901.