LXXII. NOTE ON THE ABSORPTION SPECTRUM OF VITAMIN A.

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(Received June 24th, 1929.)

It has been claimed repeatedly that vitamin A is characterised by a selective absorption in the ultra-violet region at about 320–328 $\mu\mu$ [Takahashi *et al.* 1925; Morton and Heilbron, 1928]. We have subjected this claim to the experimental test by preparing dehydroergosterol, a sterol with four double bonds, from ergosterol [Windaus and Linsert, 1928]. Spectroscopic measurements by a photographic method [Bourdillon, Fischmann, Jenkins and Webster, 1929], kindly carried out by Mr R. G. C. Jenkins, showed that this substance possessed an intense absorption exactly in the same region as that claimed for vitamin A. The absorption curve agrees with that previously obtained by a photo-electric method [Windaus and Linsert, 1928].

The free sterol as well as its acetate, however, proved to be devoid of growth-promoting properties. Incidentally, we prepared the peroxide by the action of white light on dehydroergosterol in the presence of eosin [Windaus and Linsert, 1928] and found it equally inactive. For the biological tests the substances were administered in olive oil to rats on a vitamin A-free diet in doses from 0.001 mg. to 1 mg. *per diem*, vitamin D being supplied as irradiated ergosterol.

The fact that these substances also fail to give a blue colour with AsCl_3 (or SbCl_3) is significant in view of the assumed association of this colour reaction with vitamin A. It would seem therefore that selective ultra-violet absorption at 320–328 $\mu\mu$, at any rate by itself, cannot be taken as a criterion of vitamin A.

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