

Reductive Cyclisation of *o*-Nitrophenyl Benzoate to 2-Phenylbenzoxazole

By D. G. SAUNDERS

(Research Laboratory, Kodak Limited, Wealdstone, Harrow, Middlesex)

Summary Triethyl phosphite has been found to react with *o*-nitrophenyl benzoate, to give 2-phenylbenzoxazole.

THE reduction of nitro-compounds by trialkyl phosphites to give nitrogen heterocycles is well known.¹ Recently, Kametani *et al.* have synthesised benzo[*c*]naphthyridines, from 3-ethoxycarbonyl-4-(2-nitrophenyl)pyridines, and oxazolo[5,4-*b*]quinolines from 4-(2-nitrobenzylidene)oxazol-5-ones by cyclisation with triethyl phosphite.²

We have now found that the same reagent causes a

similar insertion into the carbonyl group of an *o*-nitrophenyl ester, leading, in one step, to the formation of a benzoxazole. Thus, *o*-nitrophenyl benzoate (20.0 mmole) with triethyl phosphite (60.0 mmole) in *t*-butylbenzene (400 mmole) (N₂ atmosphere, reflux, 2 hr.) gave 2-phenylbenzoxazole (68%). Neither a longer reaction time (7 hr.), nor an excess of triethyl phosphite (90.0 mmole), raised the yield significantly.

We thank Professor J. I. G. Cadogan for his interest and helpful discussions.

(Received, May 12th, 1969; Com. 659.)

¹ J. I. G. Cadogan, *Quart. Rev.*, 1968, **22**, 222.

² T. Kametani, T. Yamanaka, and H. Ogasawara, *J. Chem. Soc. (C)*, 1969, 385.