tin in boiling acid solution.[1] It was assumed that this coloration was due to the formation of β-(5-pyrrolenyl)-isatin or pyrrole blue B. Recently it has been shown,[2] however, that pyrrole blue B in glacial acetic acid has a maximum absorption at 680–690 mμ while the maximum absorption in the microreaction was observed in the range for 510–560 mμ. For a more exact comparison the absorption spectrum of the color reaction was determined in a Hilger–Nutting spectrophotometer. The resulting curve A in Fig. 1 is quite different from the spectrum of pyrrole blue B, shown in curve B. The logarithm of specific extinction K is calculated per grams of pyrrole per liter. Thus the compound formed in the color reaction is certainly not pyrrole blue B but seems to be its decomposition product which also forms when solutions of pyrrole blue B are standing for some time. It has been indicated[2] that the decomposition product has an absorption maximum at 520 mμ.

The author is greatly indebted to the Chemistry Department of the University of Michigan for the permission to use a spectrophotometer and to Dr. F. F. Blicke for the supply of pyrrole.

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[1] F. Fromm, *Mikrochemie*, **17**, 141 (1935).

[2] F. Fromm, This Journal, **66**, 1227 (1944).

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Benzophenone-ascorbic Acid

By Philippos E. Papadakis

In view of the known bacteriological action of benzophenone in human tubercle bacilli *in vitro*[1] the following benzophenone derivative of ascorbic acid is reported.[2]

Procedure.—Equivalent quantities of ascorbic acid and benzophenone chloride in dry toluene were heated under a reflux condenser until no more hydrogen chloride was coming off. The oil-bath temperature was 90°. After filtering, the residue was treated with ice water to dissolve any unreacted ascorbic acid, then with benzene to remove any benzophenone formed and finally it was recrystallized from methyl alcohol; m. p. 207–208°. The substance is insoluble in water, soluble in methyl alcohol and ether. Further work is contemplated for the elucidation of the structure of this substance.

Anal. Calcd. for $C_{19}H_{16}O_6$: C, 67.03, H, 4.73. Found: C, 67.04, H, 4.9.

The microanalyses were done by D. Rigakos of the Rockefeller Institute for Medical Research.

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[1] B. L. Freedlander, *Am. Rev. Tuberc.*, **49**, 543 (1944).

[2] This work was completed in 1942.

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The Decomposition of Phenyliodoso Acetate[1]

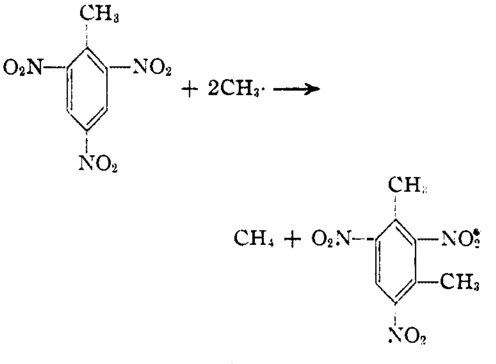
By Reuben B. Sandin and William B. McCormack

Fieser and co-workers[2] have carried out some very interesting work on the alkylation of α-naphthoquinones and aromatic nitro compounds with tetravalent lead esters, such as lead tetraacetate. By this method, for example, they were able to convert trinitrotoluene in yields as high as 32% into trinitro-*m*-xylene. Because of the similarity between iodoso compounds and certain compounds of lead,[3] it occurred to the authors of this paper that phenyliodoso acetate, like lead tetraacetate, might act as a methylating agent. It has already been shown by Criegee and Beucker[4] that aryliodoso acetates, like lead tetraacetate, can oxidize unsaturated compounds and can bring about the fission of α,β-glycols.

The experimental work described in this paper indicates that phenyliodoso acetate can behave as a methylating agent. By means of phenyliodoso acetate, trinitrotoluene has been converted into trinitro-*m*-xylene to an extent of about 20%. It has also been shown that when phenyliodoso acetate is heated by itself, decomposition occurs above 160°, and some of the reaction products are phenyl iodide, carbon dioxide, ethane and methane. We believe that the following equations represent the sequence of events[5]

$$C_6H_5I(OCOCH_3)_2 \longrightarrow C_6H_5I + 2CH_3COO\cdot \quad (I)$$

$$2CH_3COO\cdot \longrightarrow 2CH_3\cdot + 2CO_2 \quad (II)$$



(III)

Also, the thermal decomposition of some of the phenyliodoso acetate appears to follow reactions I and II. This is followed by the union of methyl

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[1] Originally received May 7, 1945.

[2] Fieser and Chang, This Journal, **64**, 2043 (1942); Fieser, Clapp and Daudt, *ibid.*, **64**, 2052 (1942); Fieser and Oxford, *ibid.*, **64**, 2060 (1942).

[3] Sandin, *Chem. Rev.*, **32**, 258 (1943).

[4] Criegee and Beucker, *Ann.*, **541**, 218 (1939).

[5] The Referee has very kindly suggested this reaction mechanism.