1-Cinnamoyl-1,2-dihydroquinaldonitrile was prepared from 12 g. of freshly made cinnamoyl chloride in exactly the same manner as the benzoyl compound; needles from alcohol, m. p. 149–150°; yield, 16 g.

Anal. Calcd. for $C_{19}H_{14}ON_2$: C, 79.75; H, 4.93; N, 9.73. Found: C, 79.62; H, 5.02; N, 9.80.

CONVERSE MEMORIAL LABORATORY
HARVARD UNIVERSITY
CAMBRIDGE, MASS.

RECEIVED APRIL 17, 1940

COMMUNICATIONS TO THE EDITOR

ELECTROPHORETIC ISOLATION OF CONSTITUENTS OF RAGWEED POLLEN EXTRACTS*

Sir:

Dialyzed extracts of giant ragweed pollen were studied with the Tiselius[1] moving boundary technique at approximately *p*H 7.4 and 1.5°. Employing the Philpot–Svensson[2] cylindrical lens system to visualize the boundaries, we have found a major constituent which is negatively charged, unpigmented and migrates more slowly than the pigmented constituents. The latter are also negatively charged. The major unpigmented constituent may constitute as much as 75% of the material in fresh extracts when estimated by the criterion of the integration of the Philpot–Svensson curves. Similar Longsworth[3] diagrams have been obtained. The unpigmented fraction is highly skin reactive in individuals with ragweed hay fever. It may be introduced into the skin by electrophoresis in these cases by the positive pole even though the substance is negatively charged at the *p*H employed. The electrical mobility of the unpigmented constituent is 0.5×10^{-5} cm. sec.$^{-1}$ in 0.05 *M* phosphate buffer at *p*H 7.0.[4] Variations have been observed in the pigmented portions of the electrophoretic diagrams and apparently depend on the extent and nature of the dialysis as well as the age and treatment of the pollen grains.

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RECEIVED MAY 17, 1940

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* This investigation has been aided by a grant from the Josiah Macy, Jr., Foundation.

(1) A. Tiselius, *Trans. Faraday Soc.*, **33**, 524 (1937).

(2) H. Svensson, *Kolloid-Z.*, **87**, 190 (1939).

(3) L. G. Longsworth and D. A. MacInnes, *Chem. Rev.*, **24**, 271 (1939).

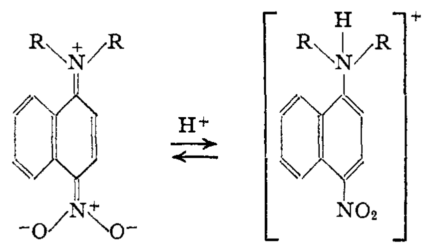
(4) H. A. Abramson, A. Sookne and L. S. Moyer, *J. Allergy*, **10**, 317 (1939); H. A. Abramson and M. H. Gorin, *Chem. Prod.*, **3**, 37 (1940).

THE STERIC INHIBITION OF RESONANCE

Sir:

It has been shown recently[1] that the concept of the steric inhibition of resonance offers an adequate explanation for the differences in acidity observed with trinitrotriphenylmethanes.

Using exactly the same reasoning, we have attacked this problem from a different point of view, *i. e.*, by a consideration of the basic strengths of substituted 4-nitro-1-naphthylamines.



(I)

(yellow) (practically colorless)

The electron pair of the amino nitrogen atom (upon which depends the basicity of the molecule) is no longer present in the resonance isomer I. If the alkyl groups in I are large, they will inhibit the ability of the group R_2N– and the benzene ring to become coplanar. The result of this must be a diminution in resonance. This reduction in resonance by steric hindrance should result in an increase in the electron density at the amino nitrogen atom and thus lead to an increase in basicity. We have shown that the basicity of the substituted amine (I, R = CH_3) is much greater than that of the unsubstituted amine (I, R = H) and that this difference is far too great to be explained by an inductive effect of the methyl groups.

The decrease in resonance reduces the polar character of these molecules[2] and should consequently lower the melting points (if other crystal

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(1) Wheland and Danish, THIS JOURNAL, **62**, 1125 (1940).

(2) Birtles and Hampson, *J. Chem. Soc.*, 10 (1937).