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A Study of the Absorption of Hydrogen Bromide by Cinnamic Acid in the Presence of Ultra Violet Light

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A STUDY OF THE ABSORPTION OF HYDROGEN BROMIDE BY CINNAMIC ACID IN THE PRESENCE OF ULTRA-VIOLET LIGHT

GLADYS M. WOODS AND THOMAS C. POULTER

In the absorption of various reagents at the double bond of organic compounds it has been noted that in some cases a different product was obtained when the absorption was carried out in the presence of ultra-violet light. This difference has been frequently explained on the basis that the polarity of the reagent being absorbed was changed by the ultra-violet light. The question has been raised as to whether the difference was actually due to the change in polarity in the double bond. In order to investigate this condition an absolute ether solution of cinnamic acid was treated with a highly polar reagent such as HBr in the presence of ultra-violet light for a period of one hour. This reaction was carried out in a quartz container connected with a reflux condenser. The ether was then evaporated, and the residue was extracted with ligroin. The small portion of the material dissolving in ligroin was found to have a melting point of about 50°. The undissolved residue had a melting point of 131° to 133° corresponding to the unchanged cinnamic acid. The physical properties of the material extracted by the ligroin correspond very closely to those of Alpha Brom Beta phenol propionic acid. It is very soluble in water and in ligroin and melts at 48° to 49°.

It is, therefore, the belief of the authors that the polarity of the double bond has been slightly altered due to the influence of ultra-violet light.

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THE CHEMICAL COMPOSITION OF THE BURLINGTON LIMESTONE NEAR OAKVILLE, IOWA

NICHOLAS KNIGHT

An analysis of four specimens of Burlington limestone from near Oakville, Louisa county, was recently made in the chemical laboratories of Cornell College. The rock is hard, compact and crystalline in structure. There seems to be a pure white variety and one with a decided tinge of yellow. We were surprised at the small percentage of magnesium in all the specimens analyzed.

The Burlington rock with its small magnesian content would be well adapted to one of the world's greatest industrial products,