

alcoholic solution of the ketone (*i. e.*, in acid solution), it is possible that the two materials are stereoisomers. This point will be examined.

Our efforts to prepare fluorenones substituted in positions ortho to the carbonyl group are being continued.

DEPARTMENT OF CHEMISTRY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASSACHUSETTS
RECEIVED DECEMBER 28, 1931
PUBLISHED FEBRUARY 5, 1932

ERNEST H. HUNTRESS
IVAN S. CLIFF

REACTION OF PHENYLACETONITRILE

Sir:

While investigating the action of sodium on benzyl cyanide, it was found that one mole of phenylacetonitrile dissolved in liquid ammonia reacts almost quantitatively with one mole of sodium to form a salt, presumably sodium phenylacetonitrile, which remains suspended in liquid ammonia. This when treated with ethyl bromide in liquid ammonia yields phenylethylacetonitrile.

In previous work Rossolymo used sodium hydroxide, Hintikka, sodamide in toluene, Bodroux and Taboury, sodamide in ether, Rising, sodium in ether, Rising and Zee, sodamide in ether, as a means of forming sodium phenylacetonitrile.

It is interesting to note that presumably only one of the hydrogen atoms on the carbon atom, alpha to the cyanide group, can be replaced at one time by sodium in liquid ammonia. If, after treatment with ethyl bromide to form phenylethylacetonitrile, this latter nitrile is treated with sodium in liquid ammonia, a mole of sodium can be introduced per mole of nitrile.

This procedure can be utilized in the preparation of mono and dialkylated alkyl or aryl cyanides. It is being investigated further in these laboratories.

DEPARTMENT OF CHEMISTRY
UNIVERSITY OF NOTRE DAME
NOTRE DAME, INDIANA
RECEIVED DECEMBER 28, 1931
PUBLISHED FEBRUARY 5, 1932

J. A. NIEUWLAND
L. H. BALDINGER

THE CRYSTALLINITY OF OPALS AND THE EXISTENCE OF HIGH-TEMPERATURE CRISTOBALITE AT ROOM TEMPERATURE

Sir:

Opals have thus far been considered as outstanding examples of truly amorphous solids. The introduction of x-ray methods did not alter this result materially since Lehmann [W. M. Lehmann, *Z. Krist.*, 59, 455 (1923)] reported that gem opal and ordinary opal give the Debye-Scherrer-Hull diagram of an amorphous solid; however, fire opal gives a faint in-