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# PHOTOCYCLIZATION OF BISPHENYLAZOSTILBENE: AN APPARENT NEW SOURCE OF PHENYL IMIDOGEN [PHENYL NITRENE]

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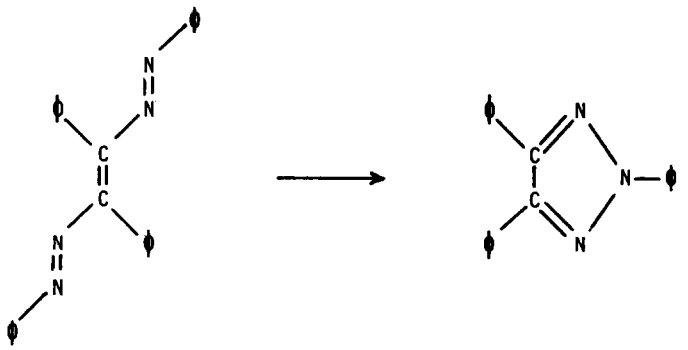
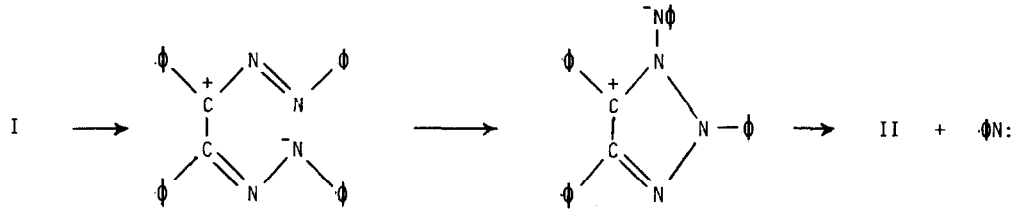
The observation[1-3] that acid treatment of bisphenylazostilbene [I] leads to 2,4,5-triphenyl-1,2,3-triazole [II] has prompted an examination of the photochemical behavior of I.



I II

Ultraviolet spectra of aliquots drawn periodically from irradiated [Hanovia apparatus, Vycor well, #654A quartz mercury vapor lamp, rapid stirring under nitrogen] solutions of I in cyclohexane indicate unambiguously the conversion of I into II. [For a solution of 0.5 g I in 1.5 l cyclohexane the change is essentially complete in 100 min.] From the resultant reaction mixtures, N-phenylcyclohexylamine identical [ir, nmr] with authentic material, is isolable, generally in about 5% yield based on starting I. Control work-ups, performed on unphotolyzed samples, yield no N-phenylcyclohexylamine. II is stable under the reaction conditions.

Although a free radical pathway leading to N-phenylcyclonexylamine may be envisaged, the observation of the insertion reaction product leaves open the attractive possibility that phenyl nitrene is formed by such steps as:



Unfortunately the test[4] of amino azepine formation from phenyl nitrene in the presence of amines has so far been thwarted by the finding, in agreement with previous[1] investigators, that I is rapidly reduced [dark, under nitrogen] to benzil osazone by amines.

Experiments are in progress to study further the chemistry of I and related systems.

## REFERENCES

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