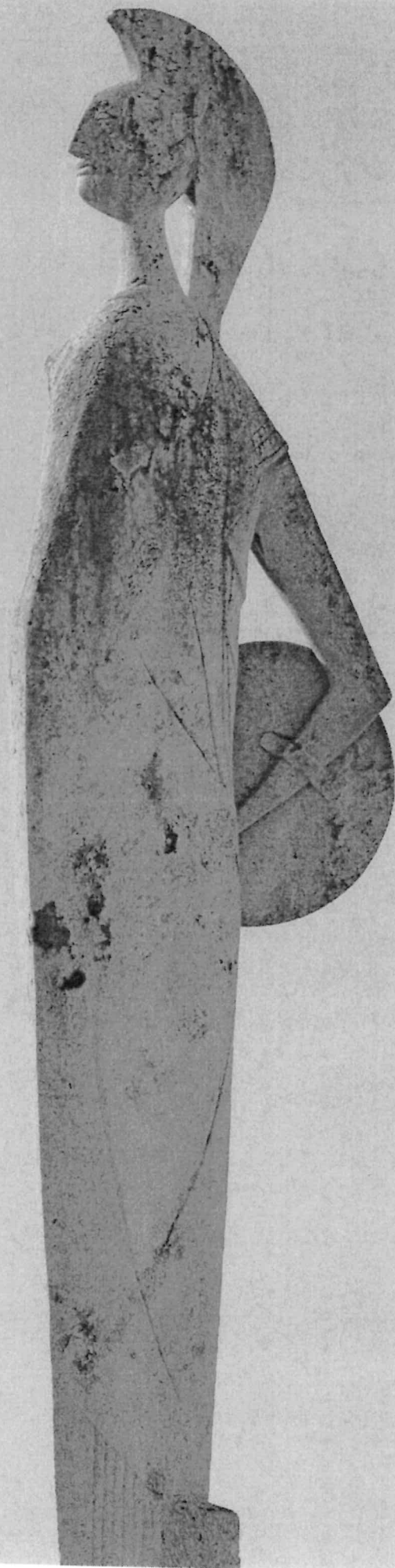




# INTERNATIONAL SYMPOSIUM ON HOMOGENEOUS CATALYSIS - XXIII

# BOOK OF ABSTRACTS



# Use of CO Surrogates in the Palladium-Catalyzed Reductive Cyclization of Nitroarenes to give *N*-Heterocycles

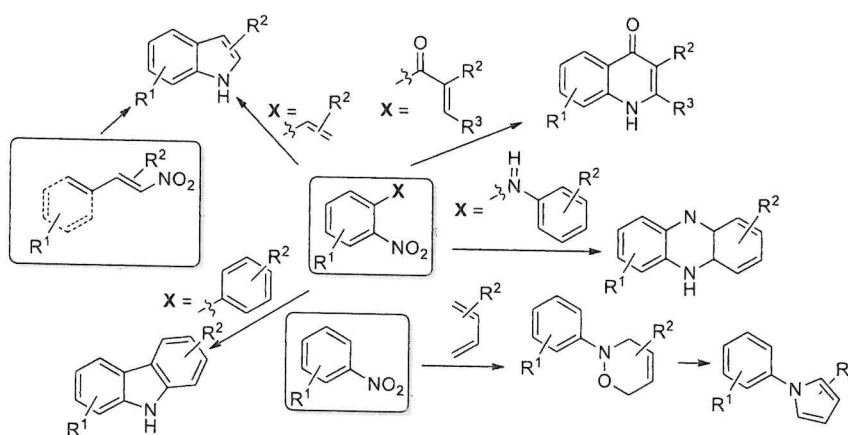
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The reductive cyclization of suitably substituted nitroarenes using CO as the reductant has been investigated for many years. However, despite high selectivities and easy work-up (CO<sub>2</sub> is the only stoichiometric byproduct) can be achieved, these reactions have not become of widespread use. This is undoubtedly because of the need for high-pressure CO lines and autoclaves, which are not available in most laboratories. In recent years, we have developed the use of phenyl formate and the HCOOH/Ac<sub>2</sub>O mixture as efficient and non-toxic CO surrogates for the reductive cyclization of nitroarenes and β-nitrostyrenes to give different *N*-heterocycles, catalyzed by palladium/phenanthroline complexes. This allows to employ commercially available and cheap thick-walled glass tubes (pressure tubes) to perform the reactions, without any need for CO lines or autoclaves.<sup>1</sup>



The reactions are often very selective (up to 99%), low catalyst loadings are required (0.1-1 mol%) and in several cases the reactions can be run on a large scale isolating the products by a simple work-up not involving any column chromatography.

In this communication, the field will be briefly outlined, whereas more details will be given on the most recent synthetic and mechanistic results.

## References

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