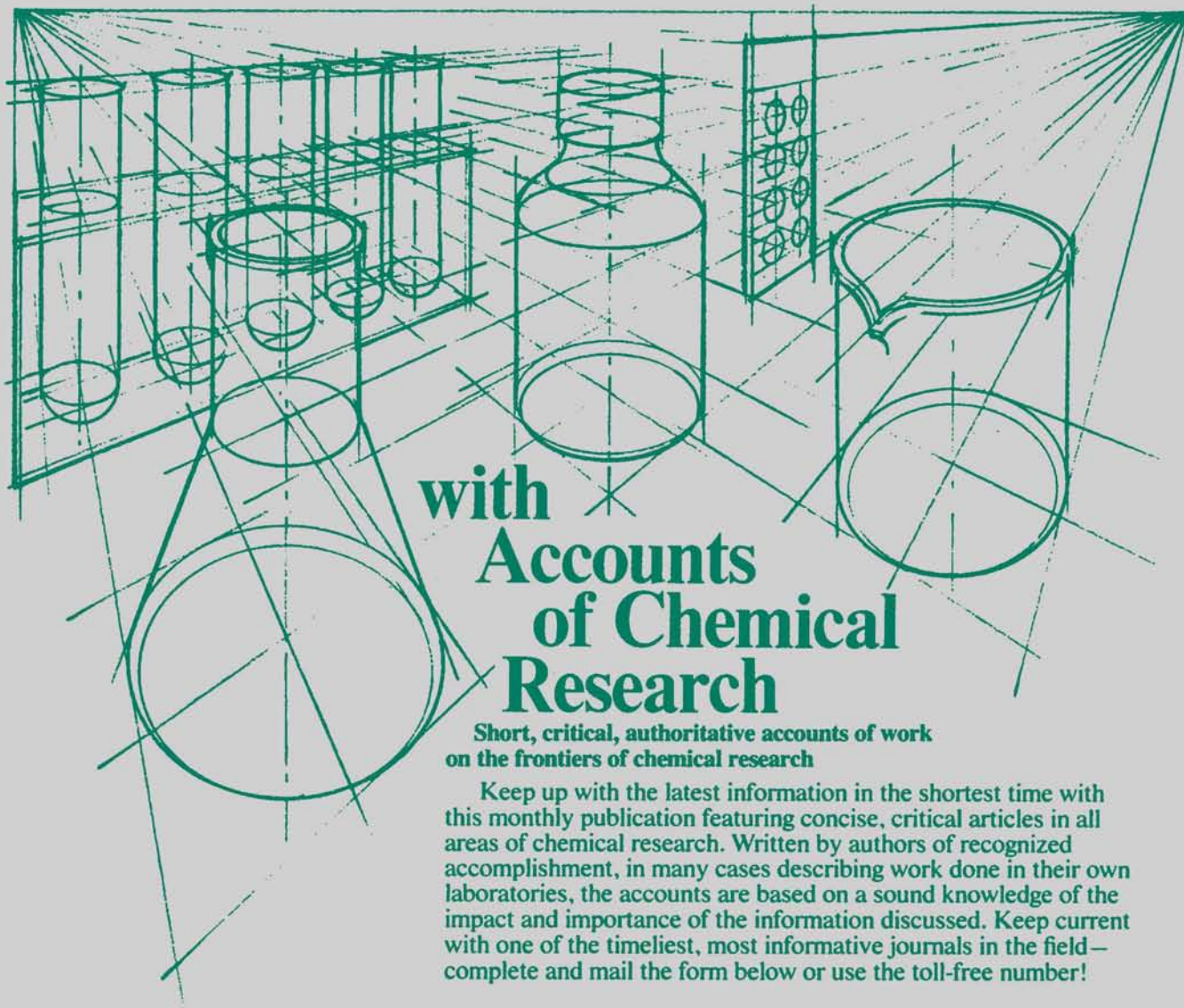


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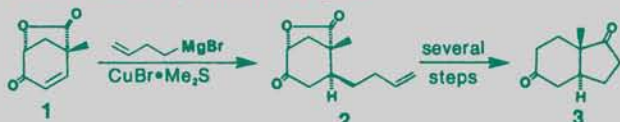


# Inspired by Gilbert Stork

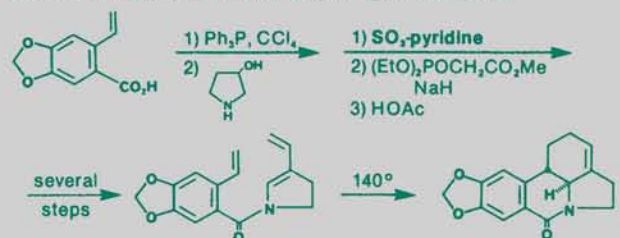
## Selected Synthetic Transformations (1971-1981)

In his long and distinguished career, Professor Gilbert Stork has pioneered some of the most creative synthetic methods to appear in the chemical literature.<sup>1</sup> Aldrich salutes Professor Stork on his 35th anniversary in research and teaching! Below are some highlights of important synthetic methodologies developed by Professor Stork and his group during the last decade.

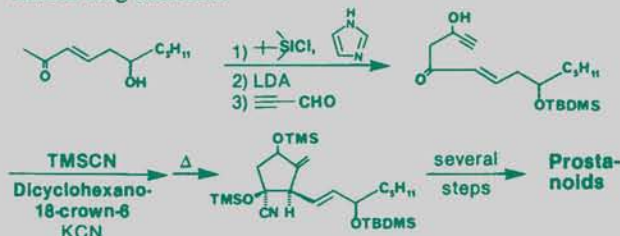
In a new, general construction of *trans*-hydrindanedi-ones, the stereochemically crucial step in the synthesis of **3** is the 1,4-addition of 1-butene-4-magnesium bromide (prepared from 4-bromo-1-butene) to **1**, promoted by copper bromide-dimethyl sulfide complex.<sup>2</sup>



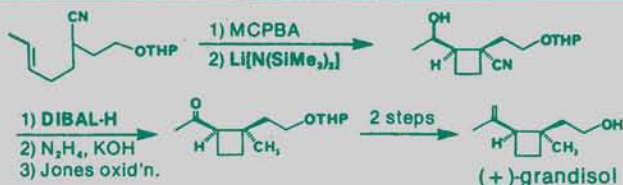
A simple stereospecific construction of the basic ring skeleton of the lycorine alkaloids was provided by application of the intramolecular Diels-Alder reaction.<sup>3</sup>



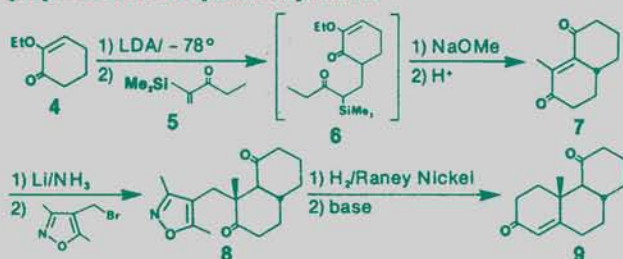
The thermal ene reaction of an appropriately substituted acyclic enyne afforded an efficient entry into the prostanoic ring skeleton.<sup>4,5</sup>



Perhaps the most general nonphotochemical synthesis of substituted cyclobutanes, the epoxy nitrile cyclization,<sup>6</sup> is illustrated by the pivotal step in a total synthesis of ( $\pm$ )-grandisol.<sup>7</sup>



A recent paper introducing the regioselective and stereoselective reductive alkylation of enediones (*i.e.*, 7-8)<sup>8</sup> demonstrates several other important Stork synthetic techniques, namely, formation of the kinetic enolate of **4**, the  $\alpha$ -silyl vinyl ketone annulation reaction (4 + 5-6-7), and the isoxazole annulation reaction (7-8-9). Reagent **5** is prepared from vinyltrimethylsilane.<sup>9</sup>



### References:

- (1) An outline of Prof. Stork's achievements appears in *Aldrichimica Acta* 1982, 15, 7. (2) *Tetrahedron Lett.* 1979, 3361. (3) *J. Am. Chem. Soc.* 1979, 101, 7110. (4) *Ibid.* 1976, 98, 6747. (5) *Ibid.* 1975, 97, 4745, 6260. (6) *J. Am. Chem. Soc.* 1974, 96, 5268. (7) *Ibid.* 1974, 96, 5270. (8) *Ibid.* 1980, 102, 1218. (9) *Ibid.* 1973, 95, 6152; *ibid.* 1974, 96, 6181. See also *ibid.* 1974, 96, 6179; *Org. Syn.* 1978, 58, 152.

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