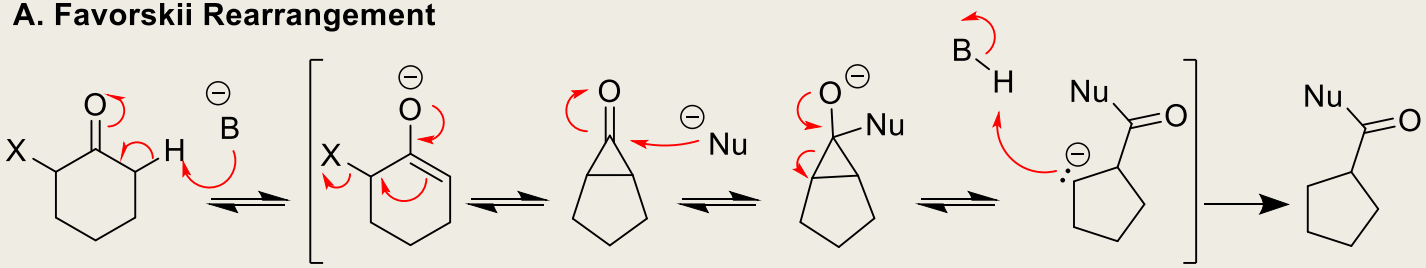
FAVORSKII AND QUASI-FAVORSKII REARRANGEMENT

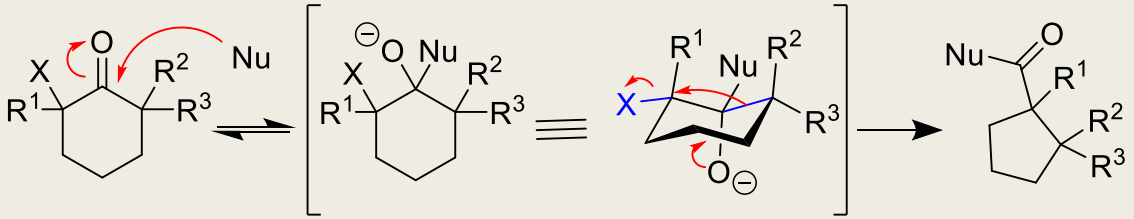
Synthesis Club: 4/24/2019

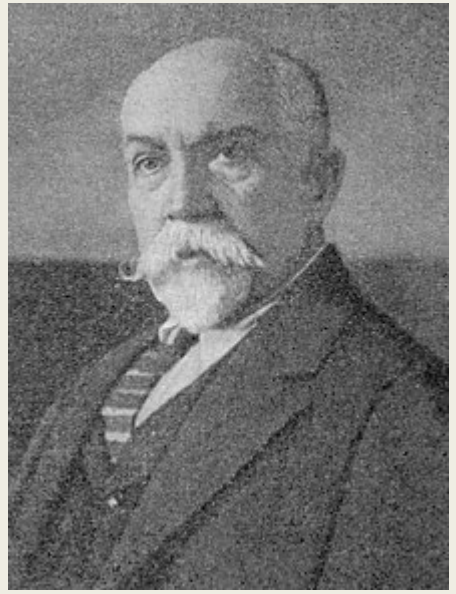
When the α-haloketone has enolizable hydrogens present the reaction mechanism proceeds through the tradition Favorskii Rearrangement (**A**). When none are present, the quasi-Favorskii mechanism (**B**) is in effect

A. Favorskii Rearrangement



B. Quasi-Favorskii Rearrangement



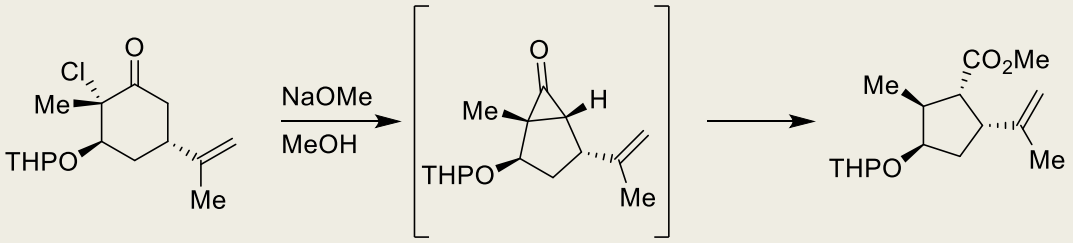


The discovery of the Favorskii rearrangement in 1894 is credited to Russian Scientist Alexey Yevgrafovich Favorskii.

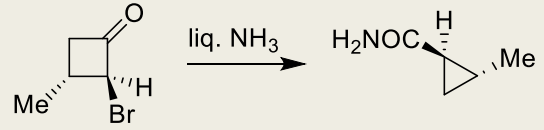
Synthetic Utility:

- The Favorskii rearrangement is a useful method for the formation of highly branched carboxylic acids as well as substituted ring systems.

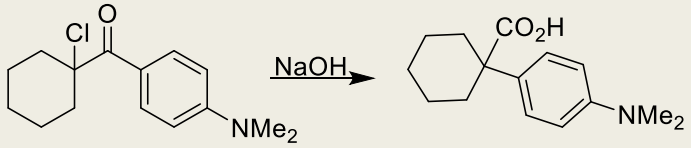
- E. Lee and co-workers



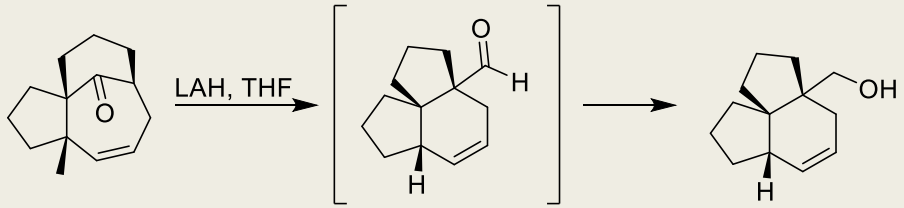
- J.Mann and co-workers



- Smissman and co-workers

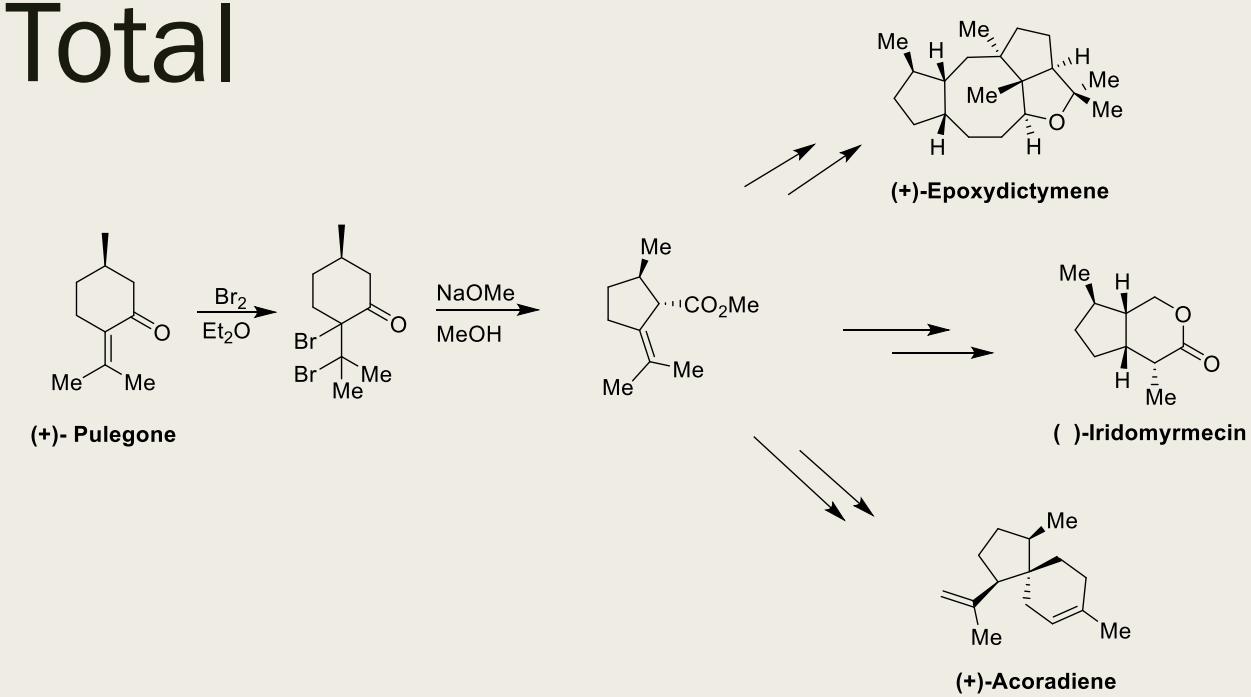


- M. Harmata and co-workers

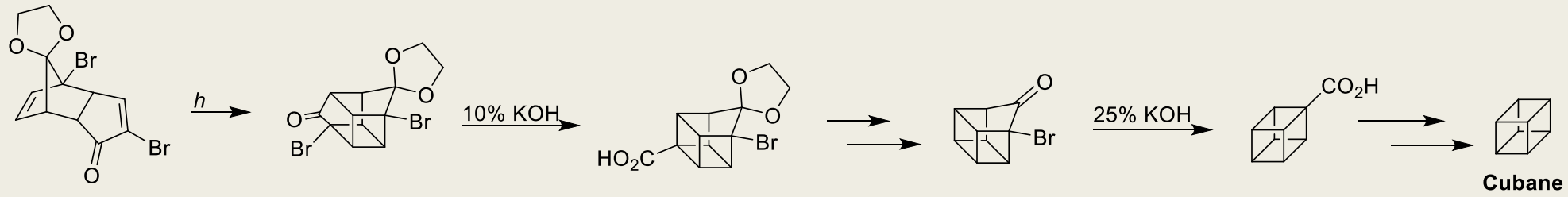


Lee, E.; Yoon, C. H. J. Chem. Soc., Chem. Commun. 1994, 479–481.
Smissman, E. E.; Diebold, J. L. J. Org. Chem. 1965, 30 (12), 4005–4007.
Mann, J. *Comprehensive Organic Synthesis* **1991**, 3, 839-859
Harmata, M.; Bohnert, G.; Kürti, L.; Barnes, C. L. Tetrahedron Lett. 2002, 43, 2347–2349

Applications in Total Synthesis



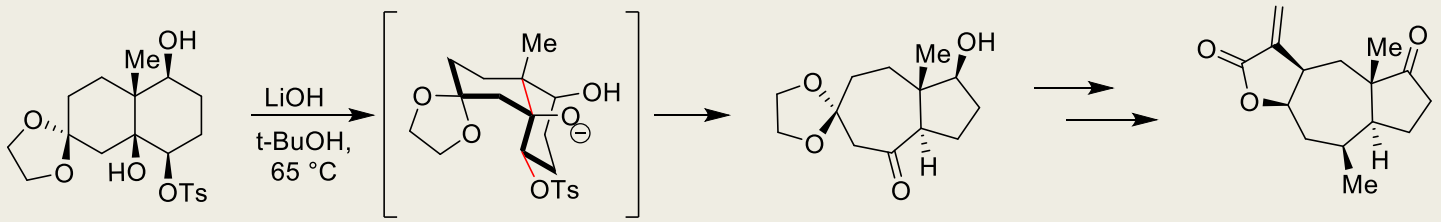
- T. Cole and Co-workers



(+)-Epoxydictymene: Jamison, T. F.; Shambayati, S.; Crowe, W. E.; Schreiber, S. L. J. Am. Chem. Soc. 1997, 119, 4353–4363.
(–)-Iridomyrmecin: Wolinsky, J.; Gibson, T.; Chan, D.; Wolf, H. Tetrahedron 1965, 21, 1247–1261.
(+)-Acoradiene: Kurosawa, S.; Bando, M.; Mori, K. Eur. J. Org. Chem. 2001, 4395–4399.

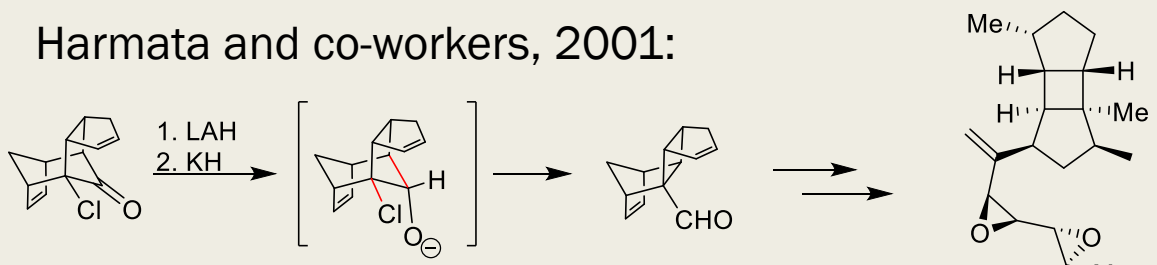
Applications in Total Synthesis

- Heathcock and co-workers, 1982:



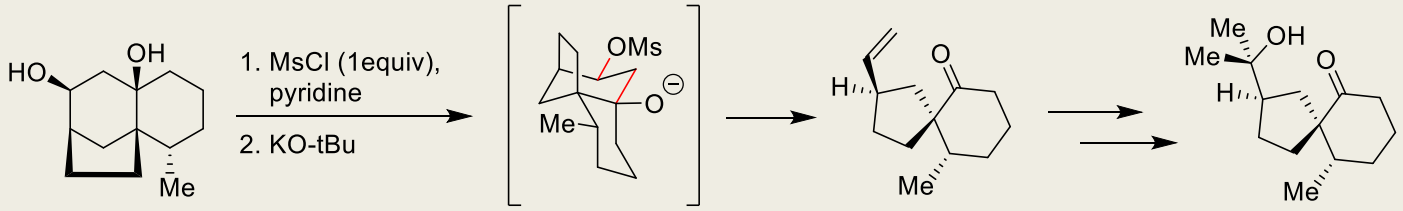
( )-Confertin

- Harmata and co-workers, 2001:



( )-Spatol

- Marshall and co-workers, 1970:



)-Hinesol

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Marshall, J. A.; Brady, S. F. J. Org. Chem. 1970, 35, 4068–4077.