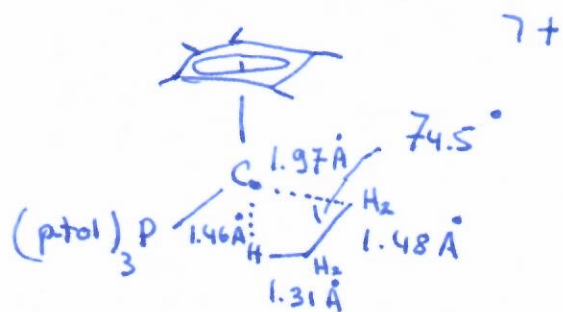
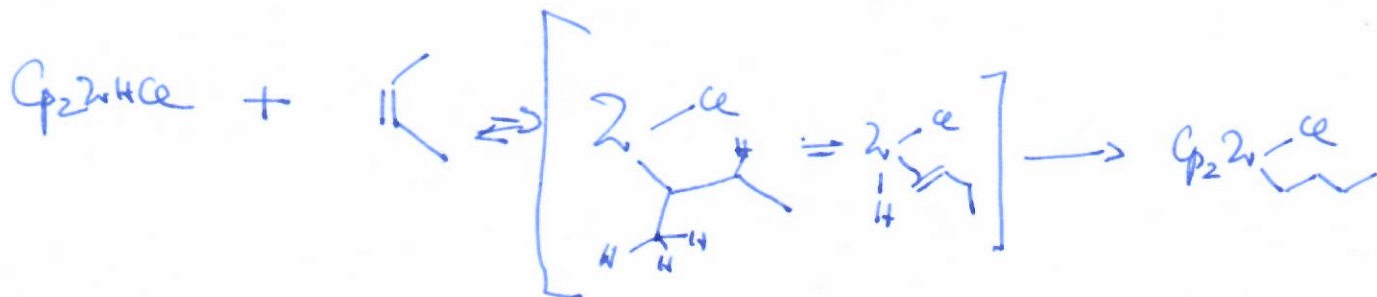
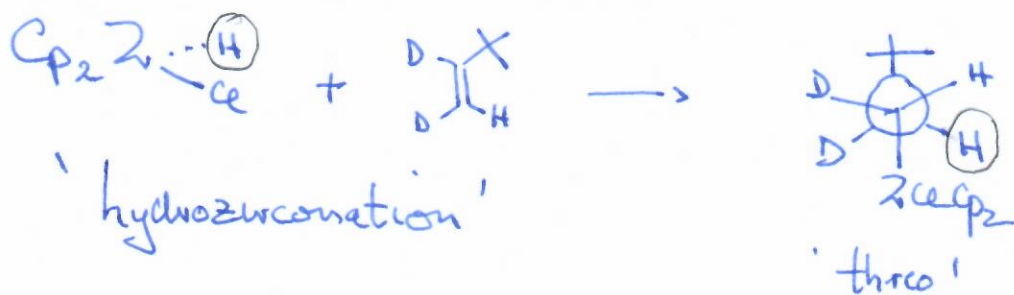


agostic alkyls as models for the transition state of olefin insertion

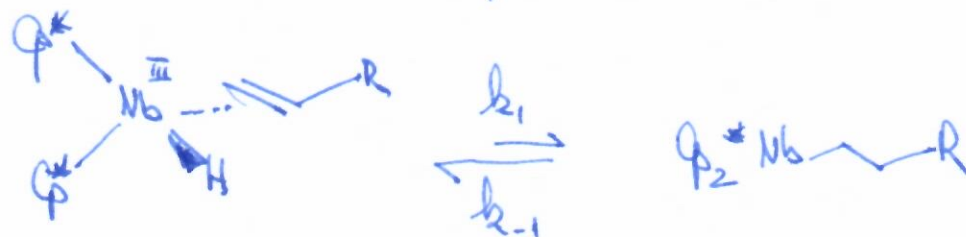


G. Orpen, Chem. Commun. 1984, 326

Syn-addition of M-H to alkene:



J. Dewar JACS 1985, 107, 2670



fast rxns: @ 50°C measure rate by 'spin saturation transfer'

$$k_1 \sim 2.4 \text{ s}^{-1}$$

$$\Delta G^\ddagger \sim 18.5 \text{ kcal/mol}$$

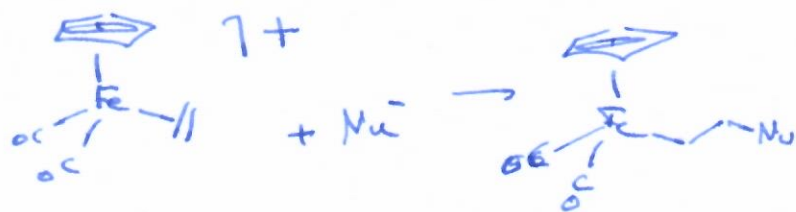
Ch 10.6

Attack on coordinated ligands

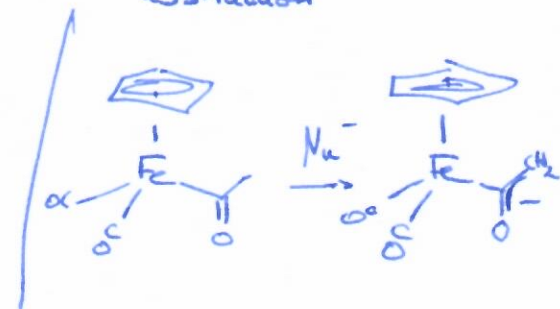
read: Ch. 8

1) nucleophilic attack

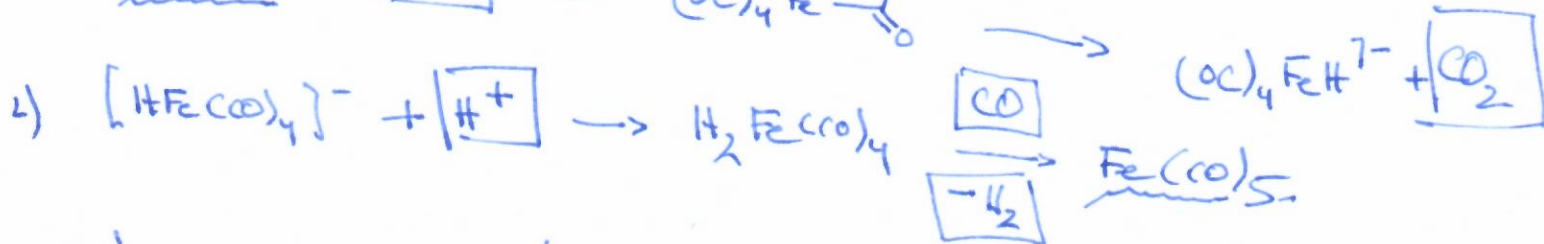
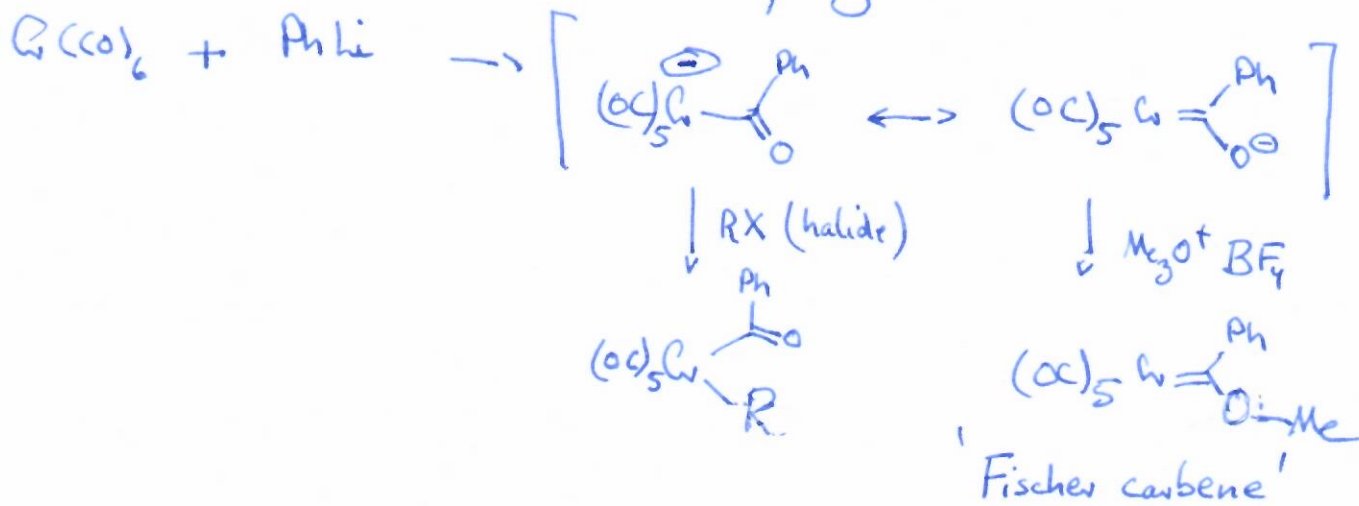
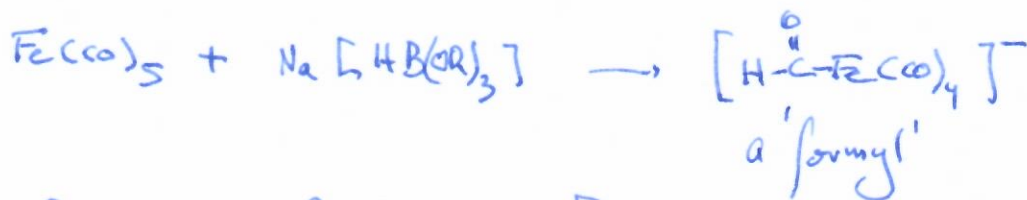
e.g. olefin addition



abstraction



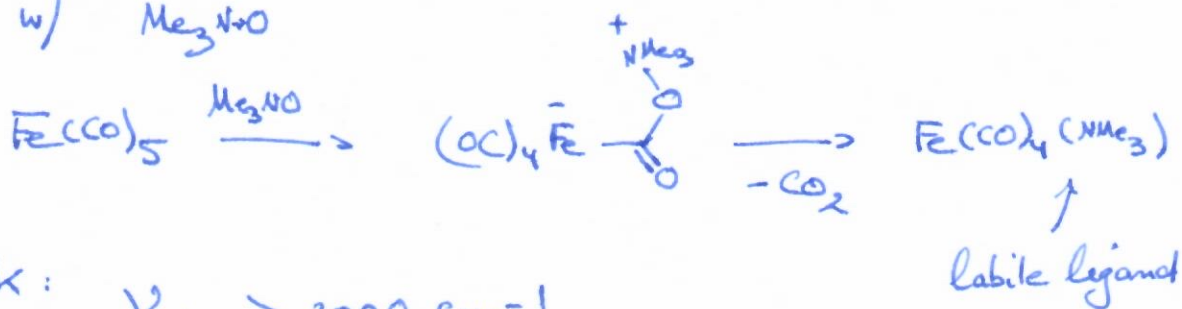
metal carbonyls



'water gas shift' rxn: $\text{CO} + \text{H}_2\text{O} \rightleftharpoons \text{CO}_2 + \text{H}_2$

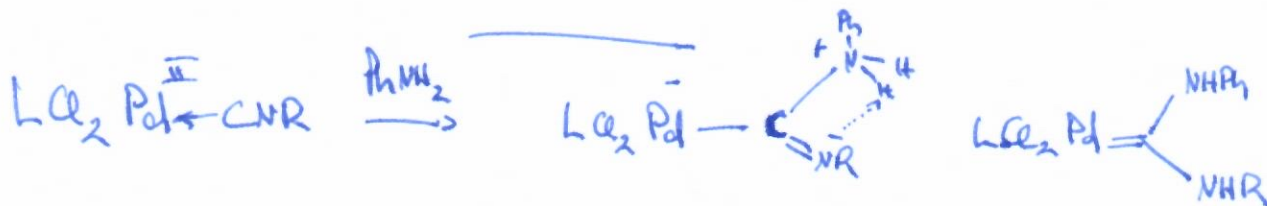
facilitate substitution of CO

rxn w/ Me_3NO



to work: $\nu_{\text{CO}} > 2000 \text{ cm}^{-1}$

J.-Y. Luh Coord. Chem. Rev. 1984, 60, 255



alkenes, polyenes, polyenyls
regioselectivity of nuc. addn.

Davies-Green-Mingos Rules

- 1) nuc. attack occurs preferentially at 'even' polyenes (over 'odd' polyenyls)
- 2) " " " " " " " " 'open' " (over 'closed' ")
- 3) a) even/open polyenes are attacked at terminal sites
b) odd/open polyenyls are attacked at terminal sites only when Lm^+ is strongly electron withdrawing

