Course 343 - lecture 3 Lecturer Gellman

Day Friday Date 10-5-12

Notes Taken By Matt Aronoff Total # of Pages 4

Submit a *Single-sided Copy* to the Office
DO NOT STAPLE

Exam #1 locations

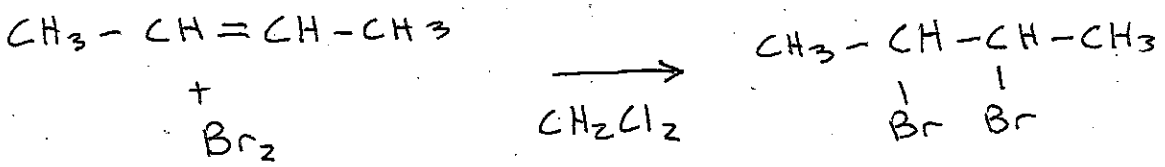
Ackermann - Ji = Noland 132

Jones - Miao = Chem 1315

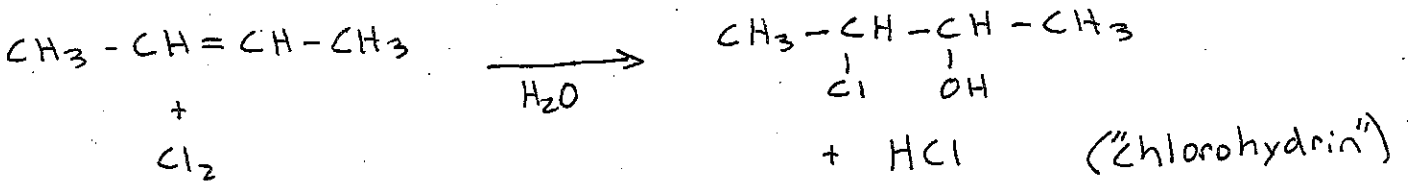
Miller - Zolot = Here (1361)

Recall: Rxns of alkenes...

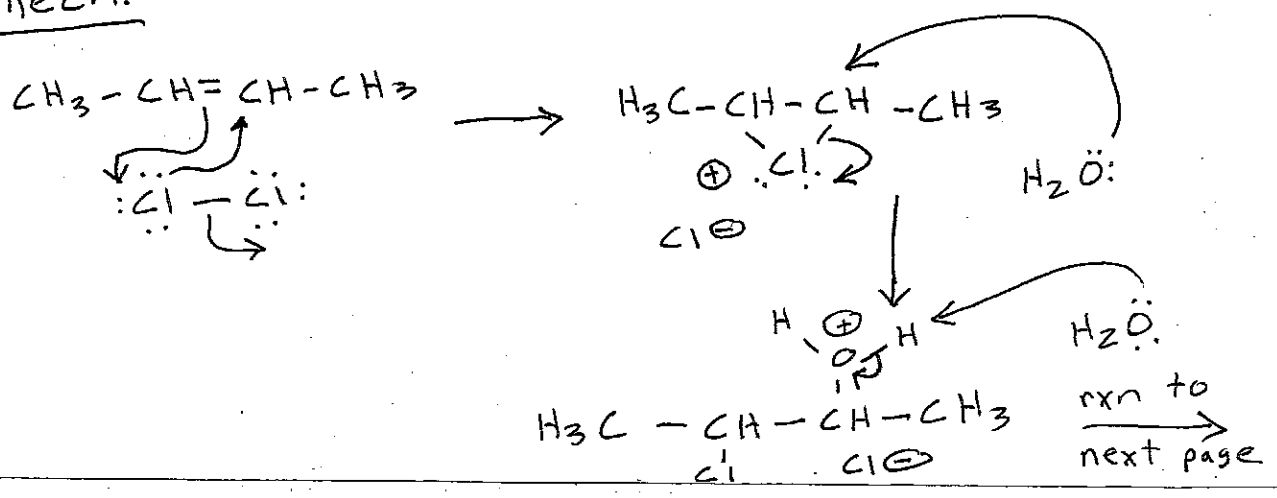
1) w/ Br_2 or Cl_2 (non-interacting solvent)



2) halohydrin formation



Mech:



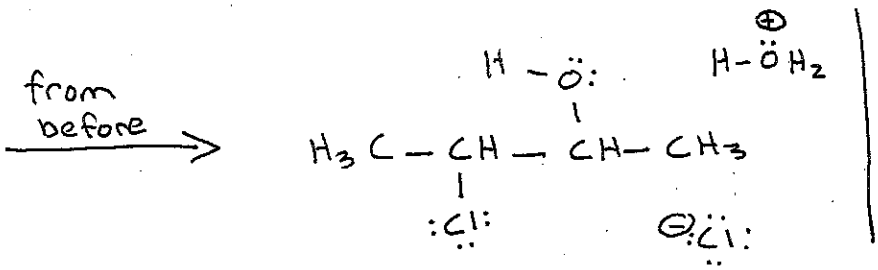
Course 343 lecture 3 Lecturer Gellman

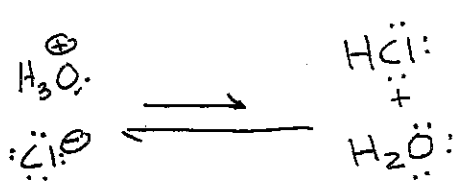
Day Friday Date 10-5-12

Notes Taken By Matt Aronoff Total # of Pages 4

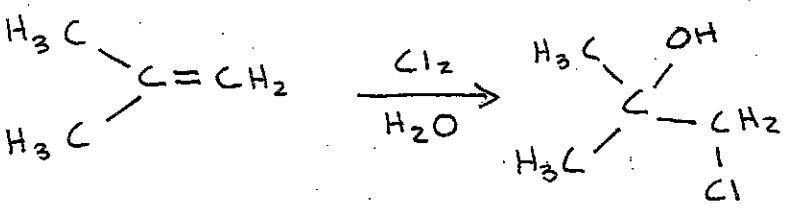
Submit a *Single-sided Copy* to the Office
DO NOT STAPLE

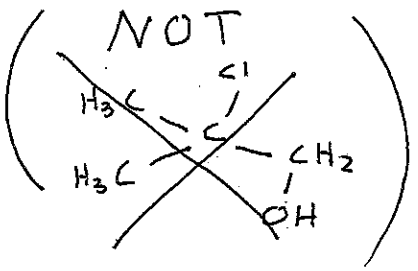
from before →



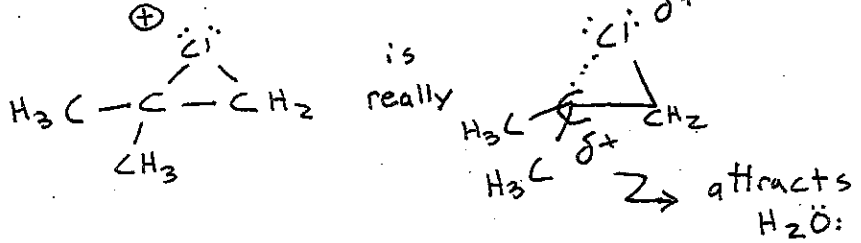


Unsymmetrical Alkene? Regiochemical Preference? Yes.



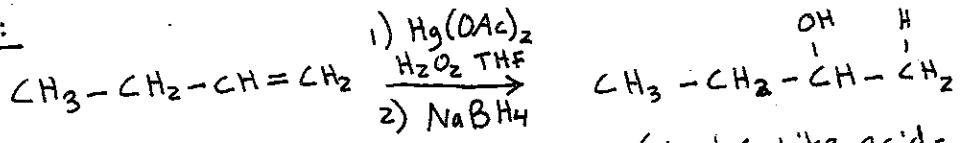


Rationale:



3) Oxmercuration - Reduction (2-step process)

Ex:



(looks like acid-catalyzed hydration, but...)

Note:
"1)" vs. "2)" tells us that there are distinct steps

P. 186 - use of compact graphical notation to indicate organic transformations

Course 343- lecture 3 Lecturer Gellman

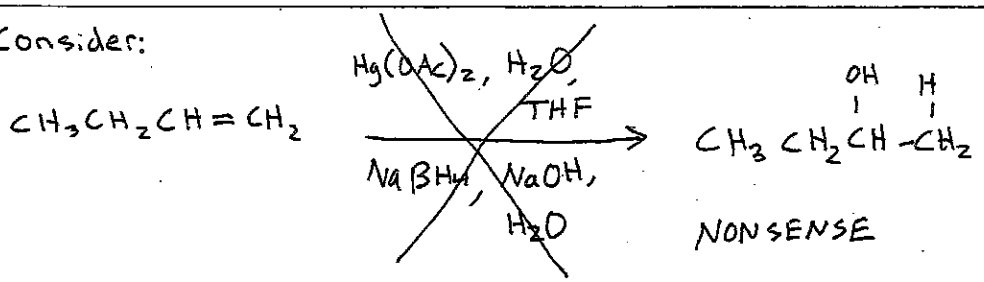
Day Friday Date 10-5-12

Notes Taken By Matt Aronoff Total # of Pages 4

Submit a *Single-sided Copy* to the Office

DO NOT STAPLE

Consider:



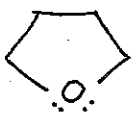
NONSENSE

Closer look...

step #1

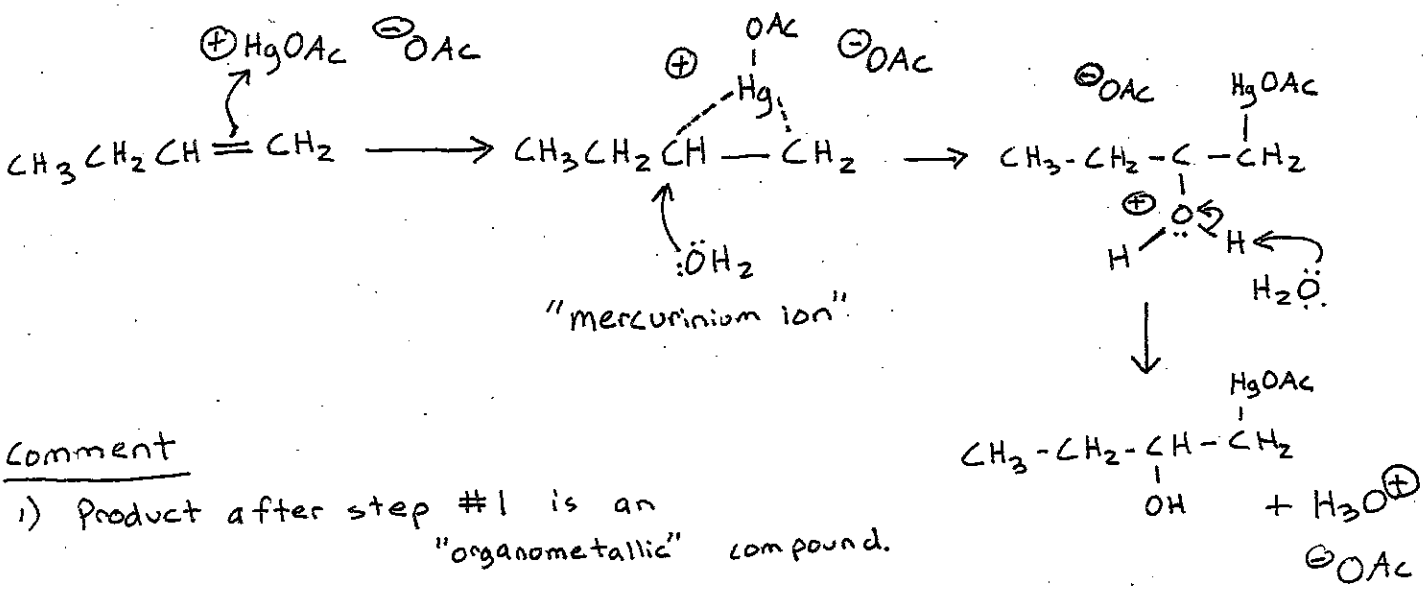
$Hg(OAc)_2 \equiv Hg^{2+}$ $2\times OAc^- \equiv$ "acetate" (conjugate base of acetic acid)

THF ≡



"Tetrahydrofuran"

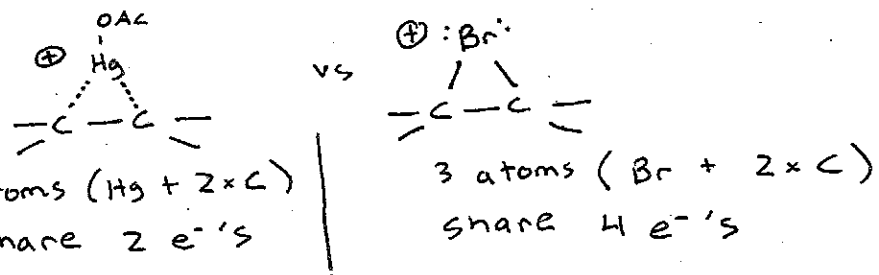
Mech:



Comment

1) Product after step #1 is an "organometallic" compound.

2) Nature of the mercurinium relative to bromonium...



Course 343 - lecture 3 Lecturer Gellman

Day Friday Date 10-5-12

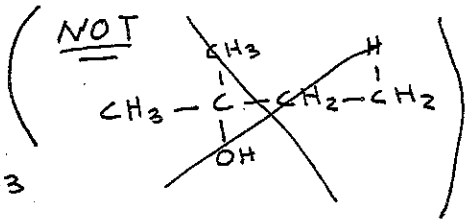
Notes Taken By Matt Aronoff Total # of Pages

Submit a *Single-sided Copy* to the Office

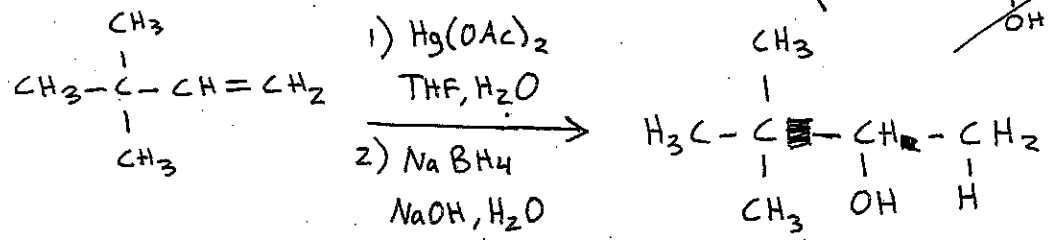
DO NOT STAPLE

Shared feature of the intermediates:

no "free" carbocation — explains why we never see carbocation rearrangements in these rxns.

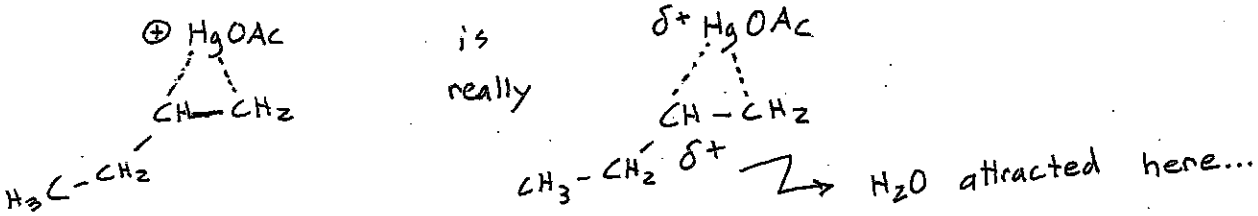


Ex:

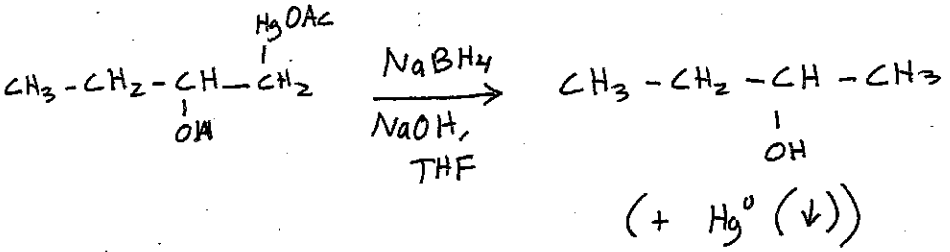


This process gives only the "Markovnikov" product — origin of regiochemical preference?

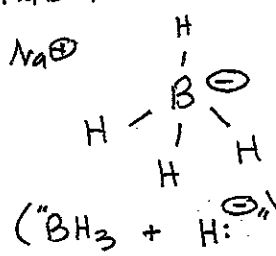
Rationale:



2) Reduction



NaBH4 =



Mechanism not fully understood!

Overall: Accomplish same transformation as alkene hydration but w/o possible rearrangement.