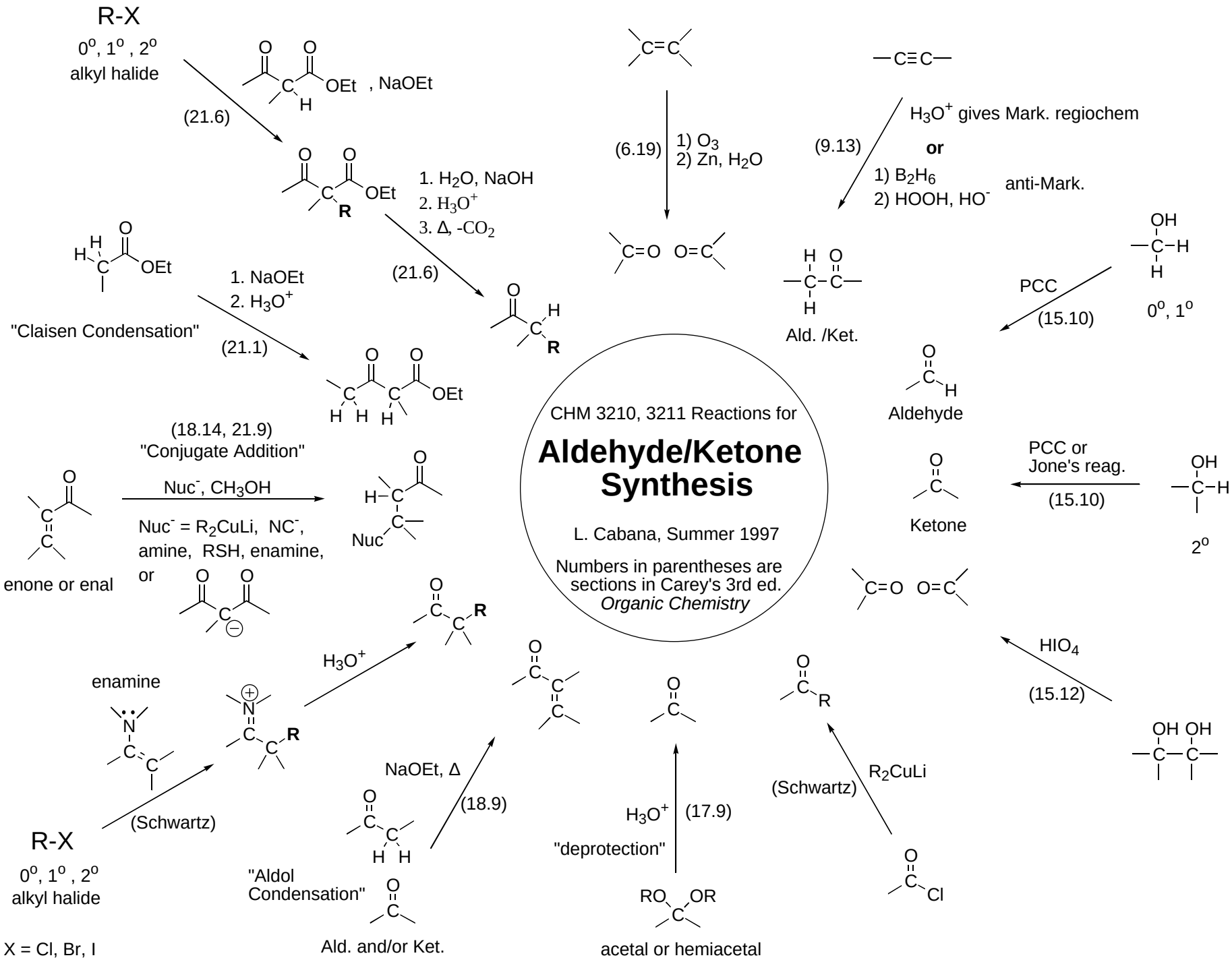
CHM 3210, 3211 Reactions for
Aldehyde/Ketone Synthesis
L. Cabana, Summer 1997
Numbers in parentheses are sections in Carey's 3rd ed. Organic Chemistry
R-X
0°, 1°, 2° alkyl halide
(21.6)
, NaOEt
1. H2O, NaOH
2. H3O+
3. Δ, -CO2
(21.6)
1. NaOEt
2. H3O+
(21.1)
"Claisen Condensation"
(6.19)
1) O3
2) Zn, H2O
(9.13)
H3O+ gives Mark. regiochem
or
1) B2H6
2) HOOH, HO-
anti-Mark.
Ald. /Ket.
PCC
(15.10)
0°, 1°
Aldehyde
PCC or Jone's reag.
(15.10)
2°
Ketone
HIO4
(15.12)
R2CuLi
(Schwartz)
H3O+
"deprotection"
(17.9)
acetal or hemiacetal
NaOEt, Δ
(18.9)
"Aldol Condensation"
Ald. and/or Ket.
H3O+
enamine
(Schwartz)
R-X
0°, 1°, 2° alkyl halide
X = Cl, Br, I
(18.14, 21.9)
"Conjugate Addition"
Nuc-, CH3OH
Nuc- = R2CuLi, NC-, amine, RSH, enamine, or
enone or enal