Palladium-Catalyzed Nucleophilic Allylation of Aldehydes or Aldimines

**Significance:** Ring-expansion reactions of vinylcyclopropanes are powerful tools for organic synthesis. The authors describe the palladium-catalyzed nucleophilic allylation of aldehyde and aldmines with vinylcyclopropane in the presence of dimethylzinc.

**Comment:** The allylation of aldehydes with vinylcyclopropane and diethylzinc proceeded to provide homoallyl alcohols with anti stereoselectivity. Aldimines prepared from aldehyde and primary amines in situ underwent a similar allylation to give homoallylamines with syn stereoselectivity. The products can be converted by reaction with a tetranuclear zinc cluster into $\gamma$-vinyl-$\delta$-valerolactones and $\gamma$-vinyl-$\delta$-valerolactams. The transformation is useful for the efficient synthesis of bioactive molecules.