Total Synthesis of (±)-Periplanone B

**Significance:** (±)-Periplanone B is a sex pheromone produced by the female American cockroach, *Periplaneta americana*, to attract male cockroaches. In 1979, Still reported the first synthesis and determined its relative configuration. His elegant synthesis relied on an anionic oxy-Cope rearrangement to form the macrocyclic ten-membered ring. After subsequent Rubottom oxidation the stage was set to introduce the epoxide groups based on the principles of macrocyclic stereocontrol.

**Comment:** Divinylcyclohexenol E was obtained from enone A through a multi-step sequence. Ring expansion to cyclodecadienone F was achieved by anionic oxy-Cope rearrangement and further Rubottom oxidation. Bisepoxide J was obtained from enone G through nucleophilic epoxidation and Corey–Chaykovsky reaction. Deprotection and subsequent Sarett oxidation resulted in racemic periplanone B.