G.-Q. CHEN, G. KEHR, C. G. DANILIUC, G. ERKER* (UNIVERSITÄT MÜNSTER, GERMANY)
1,1-Alkenylboration of Diarylphosphino-enynes: Convenient Synthetic Entry to Vicinal P/B Lewis Pairs at Extended Conjugated π-Frameworks
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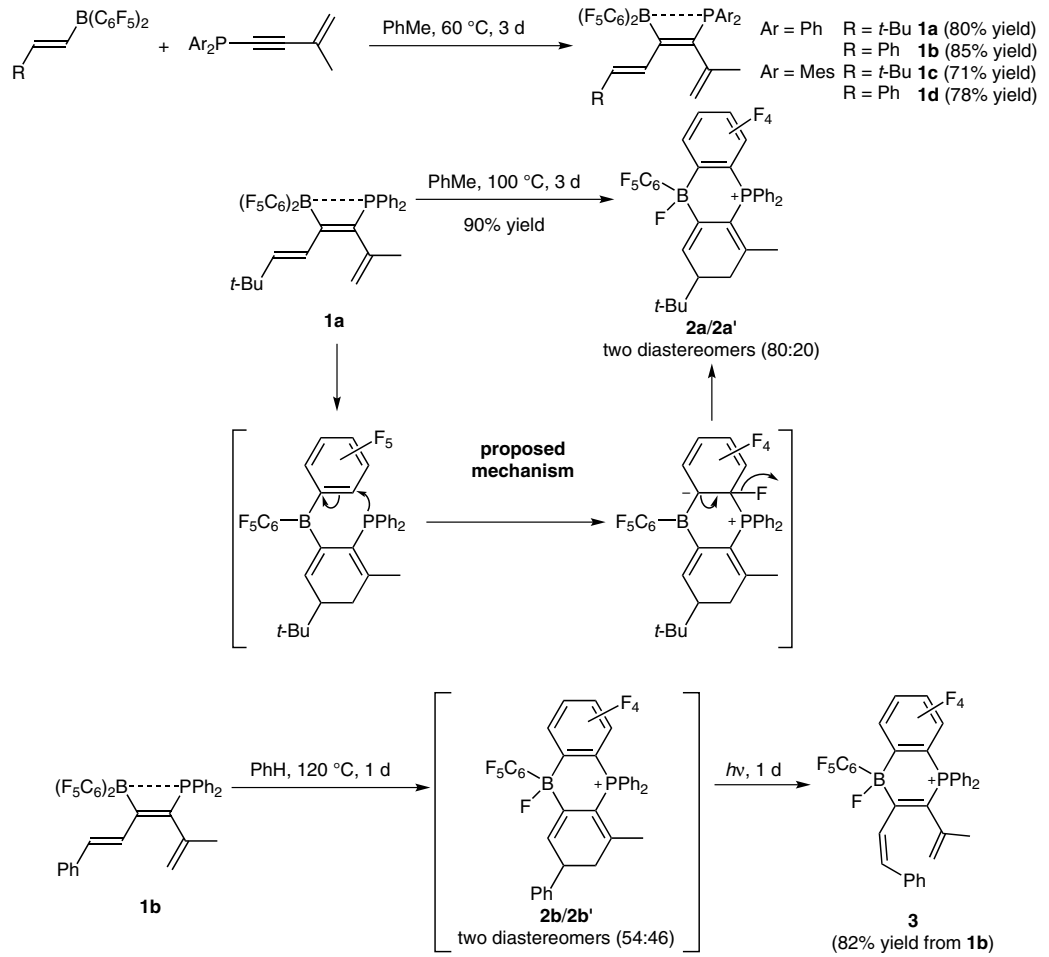
Category
Synthesis of Materials and Unnatural Products

Key words
electrocyclization
ring closure
ring opening

PB&J: Phosphorus and Boron at the Junction of Two π-Systems



Significance: The 1,1-alkenylboration of alkynes is an unique route to large conjugated π-systems. Erker and co-workers demonstrate that the 1,1-alkenylboration of diarylphosphino-enynes proceeds similarly to give hexatrienes **1**. Upon thermolysis, two concurrent transformations occur: 6π-electrocyclic ring closure of the hexatriene moiety and nucleophilic aromatic substitution (S_NAr) of a pentafluorophenyl group by the phosphine nucleophile to yield heterotricyclic products **2**.

Comment: These reactions are a convenient synthetic route to new molecules containing vicinal P/B Lewis pairs. Thermolysis products are only reported for **1a** and **1b**. Would the thermolysis of **1c** and **1d**, which contain bulky $(Mes)_2P$ nucleophiles, result in electrocyclic ring closure without concurrent S_NAr?

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