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Abstract: The reaction of 1-boryl-1-alkenyl chlorosilane derivatives with alkynyllithium reagents [Li-C_{equiv} C-R³ (R³ = Ph, SiMe₃)] at low temperature (-78 °C) affords alkenyl(alkyn-1-yl)silanes. These compounds are precursors of 1-silacyclobutene derivatives, which are formed via intramolecular 1,1-vinylboration. This reaction works for various groups at silicon (R¹/R²: R¹ = H, Me, Ph; R² = Me, Ph) and at the C=C and C_{equiv} C units (R/R³: R = ⁿBu, Ph; R³ = ⁿBu, Ph, SiMe₃). The conversion into 1-silacyclobutene derivatives is incomplete only in the case of R³ = SiMe₃. The reactions were monitored by NMR spectroscopy in order to elucidate the reaction mechanism, and the proposed structures of all new compounds follow from consistent sets of NMR parameters (¹H-, ¹³C-, ¹¹B-, ²⁹Si-NMR).

Key Words: Alkynylsilanes, triorganoboranes, hydroboration, organoboration, silacyclobutenes, NMR

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