Triethylborane: An "Old" Reagent with New Functions. 1,2-Hydroboration

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In contrast with previous findings, triethylborane, BEt_3, can act as a hydroborating reagent. Thus, the reactions of BEt_3 with alkyn-1-yl(trichloro)silanes, di(alkyn-1-yl)dichlorosilanes, alkyn-1-yl(dichloro)vinylsilanes, trichloro(vinyl)silane, and dichloro(methyl)vinylsilane for several days in excess BEt_3 as the solvent at 100 – 120 °C were found to give exclusively products of 1,2-hydroboration. This unexpected behaviour was compared with that of tri-*n*-propylborane, B^nPr_3, and 9-borabicyclo[3.3.1]nonane, 9-BBN in analogous reactions, 9-BBN being a well established hydroborating reagent. All products were characterised by a consistent set of NMR data (^1H, ^{11}B, ^{13}C and ^{29}Si NMR).

Key words: Alkynes, Alkenes, Triethylborane, Silanes, Hydroboration, NMR