1,1-Ethylboration of Di(alkyn-1-yl)silanes with Two and Three Si-H Functions. New Silacyclopentadienes

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Z. Naturforsch. **60b,** 251 – 258 (2005); received August 24, 2004

The reaction of the di(alkyn-1-yl)silanes $Me_2Si(C{\equiv}CSiMe_2H)_2$ **1a** and $Me(H)Si(C{\equiv}CSiMe_2H)_2$ **1b** with triethylborane was studied. In the case of **1a**, the 4-ethyl-3-diethylboryl-1,1-dimethyl-2,5-bis(dimethylsilyl)-1-sila-2,4-cyclop entadiene **2a** was the sole product. In the case of **1b**, the analogous silole **2b** was formed along with two other products which were identified as di(alkenyl)silanes **3b** and **4b**, in which different types of electron-deficient Si-H-B bridges could be detected. All products were characterised by consistent sets of solution NMR data (^{1}H, ^{11}B, ^{13}C and ^{29}Si NMR). The coupling constants $^1J(^{13}C,^{13}C)$ were measured for **2a** and calculated by using DFT methods (B3LYP/6-311+G(d,p) level of theory).

Key words: Alkynes, Boranes, Siloles, Si-H Activation, NMR