the residue was recrystallized from a hexane—benzene mixture (10 : 1) to give oxadiazine **3c**, yield 93%, m.p. 193—195 °C. Found (%): C, 39.89; H, 4.27; N, 14.43. $C_{13}H_{16}F_6N_4O_3$. Calculated (%): C, 40.02; H, 4.13; N, 14.36. ^1H NMR ($CDCl_3$), δ: 3.44 (m, 4 H, CH_2N), 3.69 (m, 4 H, CH_2O). ^{19}F NMR ($CDCl_3$), δ: −3.04.

The ^1H and ^{19}F NMR spectra were recorded on a Bruker CXP 200 spectrometer. Melting points were measured in a capillary.

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Received September 25, 1997;
in revised form November 28, 1997

2,2′-Ethylenedi-1-boraadamantane — a new derivative of 1-boraadamantane

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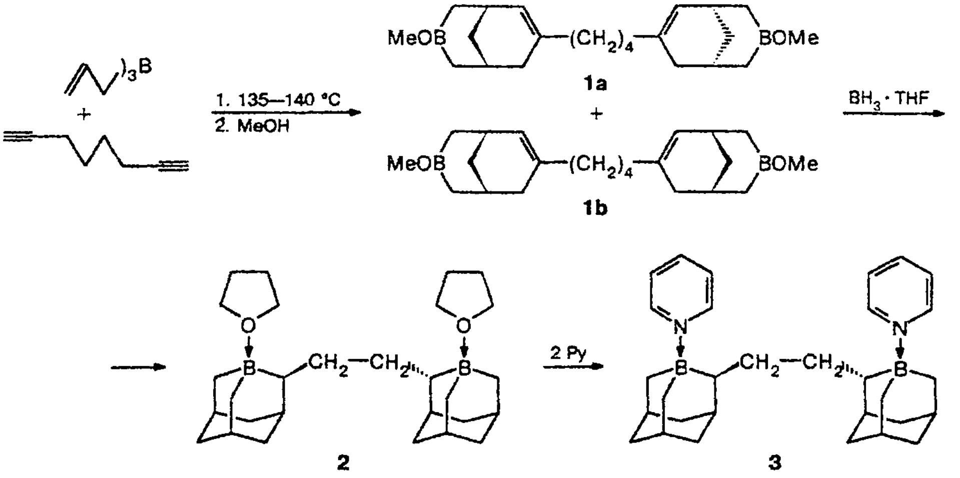
1-Boraadamantane and its homologs possess enhanced chemical activity due to the tetrahedral (sp^3) configuration of the boron atom,[1] which is unusual for triorganoboranes R_3B. Based on these compounds, we developed preparative methods for the synthesis of different types of cyclic, bicyclic, and cage compounds, including 1,3,5-trimethylenecyclohexane,[2] remantadine,[3] and 1-azaadamantanes.[4] In this work, we report on the first synthesis of a compound with two 1-boraadamantane fragments in the molecule.

The reaction of triallylborane with octa-1,7-diyne at 135—140 °C (allylboron—acetylene condensation[5]) results (after treatment with methanol) in the formation of 7,7′-tetramethylenedi(3-methoxy-3-borabicyclo[3.3.1]non-6-ene) (**1**), probably, as a mixture of diastereomers **1a** and **1b**.

Hydroboration of **1** by treatment with a solution of $BH_3 \cdot THF$ in THF according to the known procedure[6] followed by heating at 66 °C for 2 h afforded a tetrahydrofuran complex of 2,2′-ethylenedi-1-boraadamantane



Translated from *Izvestiya Akademii Nauk. Seriya Khimicheskaya*, No. 4, pp. 749—750, April, 1998.

1066-5285/98/4704-0728 $20.00

in the form of one diastereomer **2**, which was isolated from the reaction mixture due to its low solubility in tetrahydrofuran (yield 37%). Treatment of complex **2** with pyridine gave a bispyridine complex **3** stable in air.

The structures of the compounds obtained were confirmed by ^1H, ^{11}B, and ^{13}C spectroscopy and elemental analysis. The structure of bis-adduct **3** was established by X-ray diffraction analysis.

Compounds 1a,b, b.p. 179—182 °C ($2 \cdot 10^{-2}$ Torr), yield 60%, n_D^{20} 1.5170. Found (%): C, 74.80; H, 10.49; B, 6.00. $C_{22}H_{36}B_2O_2$. Calculated (%): C, 74.61; H, 10.25; B 6.10. ^1H NMR ($CDCl_3$), δ: 0.78—2.5 (m, 32 H, H aliphat.); 3.61 (s, 3 H, OMe); 5.39 (m, 1 H, HC=C). ^{13}C NMR ($CDCl_3$), δ: 24.3 and 25.5 (C-2, C-4); 27.2 (CH_2CH_2); 27.5 and 29.2 (C-1, C-5); 32.7 and 37.3 (C-8, C-9); 37.5 ($\underline{C}H_2$—C=C); 127.9 ($\underline{C}$H=C); 134.0 (CH=$\underline{C}$) .

Compound 2, m.p. 188—189 °C, yield 37%. ^{11}B NMR (THF-d_8), δ: 11.8. ^{13}C NMR (THF-d_8), δ: 27.8 (CH_2—THF); 28.6, 30.0 and 40.2 (C-2, C-8, C-9); 36.1, 36.5 and 37.7 (C-3, C-5, C-7); 29.9, 35.8, 43.3 and 43.9 (CH_2); 69.6 (CH_2O—THF).

Compound 3, m.p. 214—215 °C (from ethanol), yield 72%. Found (%): C, 79.59; H, 10.08; B, 4.28. $C_{30}H_{42}B_2N_2$. Calculated (%): C, 79.67; H, 9.36; B, 4.78. ^{13}C NMR (C_5D_5N), δ: 25.8, 34.9 and 39.9 (C-2, C-8, C-9); 29.0, 32.2, 40.5 and 41.6 (CH_2); 32.8, 33.5 and 35.0 (C-3, C-5, C-7); 124.0, 137.9, and 143.6 (Py).

This work was financially supported by the Russian Foundation for Basic Research (Project No. 96-03-32555) and the Government of the Russian Federation (Support for Leading Scientific Schools, Project No. 96-15-97289).

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Received December 29, 1997

First example of a binuclear complex with the Pt—Re bond containing bridged nitrogen atoms

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We have found that the reaction of $Re(CO)_5Cl$ with PtL_2 (**1**), where L = 1,2-$N(NPh)C_6H_4$ (compound **1** was obtained by the reaction of K_2PtCl_4 with 1,2-$NH_2(NHPh)C_6H_4$ in the presence of KOH), under UV irradiation in *m*-xylene at 80 °C results in the formation of a diamagnetic heterobimetallic complex $(OC)Pt[\mu\text{-}N,N'\text{-}N(NPh)C_6H_4]_2ReCl[NH(NPh)C_6H_4]$ (**2**), which was isolated as a solvate with a benzene molecule as one of the reaction products by column chromatography using benzene as the eluent (Kieselgel 60, Merk, 70—230 Mesh ATSM) in 28% yield. The IR spectrum of compound **2** contains only one band of CO (2025 cm^{-1}). According to the X-ray diffraction data of brown single crystals of complex **2** (space group $P\bar{1}$, a = 11.290(3), b = 12.191(3), c = 14.627(4) Å, α = 83.98(2)°, β = 73.69(2)°, γ = 82.67(2)°, V = 1911.3(9) $Å^3$, Z = 2, R = 0.031), the molecule with two chelate bridging ligands (Fig. 1) contains bond between the Pt^I and Re^{II} ions with length 3.055(1) Å. In these ligands, the imide nitrogen atoms are bound to both metals (Pt—N 2.006(6), 2.004(6) Å, Re—N 2.019(5), 1.894(5) Å, N=C 1.339(10), 1.363(11) Å), and the N atoms of the NPh group close the chelate coordination of the ligands to the Re and Pt atoms, respectively (Pt—N 2.026(8) Å, Re—N 2.076(5) Å). Despite this method of bonding, both of the L ligands have the quinoid structure (N=C 1.336(11),

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Translated from *Izvestiya Akademii Nauk. Seriya Khimicheskaya*, No. 4, pp. 751—752, April, 1998.