Frustrated Lewis pairs consisting of N-heterocyclic carbenes (NHC) and the borane B(C₆F₅)₃ react with elemental sulfur or selenium to give products of the type NHC-E-B(C₆F₅)₃, where E is S or Se. Three such products, two with sulfur and one with selenium, were characterized by X-ray diffraction and shown to exhibit considerable conformational flexibility, as revealed by differing torsion angles in the atom sequence N–C–E–B–C_{ipso}–C_{ortho}. In the sulfur derivatives, the S–B bonds are all long (ca. 2.05 Å), and the C–S bonds (ca. 1.73 Å) are clearly lengthened compared to imidazole-2-thiones. The Se–B distance of 2.2111 Å is the first selenone-borane bond length to be determined by X-ray analysis.

Key words: N-Heterocyclic Carbenes, Frustrated Lewis Pairs, Sulfur, Selenium