1014-34-1110 **Qingkai Kong*** (kong@math.niu.edu), Dept of Math Sciences, Northern Illinois University, DeKalb, IL 60116, and **Hongyou Wu** (wu@math.niu.edu) and **Anton Zettl** (zettl@math.niu.edu). *Limits of Sturm-Liouville Eigenvalues When the Interval Shrinks to an End Point.*

We investigate the behavior of the eigenvalues of a self-adjoint Sturm-Liouville problem with a separated boundary condition when one of the end points of the interval approaches the other. It is shown that all eigenvalues except the first approach positive infinity, and the boundary conditions for which the first eigenvalue tends to positive infinity and negative infinity, respectively, are found. For the remaining boundary conditions, conditions on the equation are obtained which guarantee that the first eigenvalue approaches a finite limit. Several examples are given to illustrate our results. (Received September 27, 2005)