1062-05-195   **Mark Daniel Ward*** (`mdw@purdue.edu`), Purdue University, Department of Statistics, 150 North University Street, West Lafayette, IN 47907-2067. *Asymptotic Analysis of Generalized Bernoulli Numbers.* Preliminary report.

The asymptotic properties of the Bernoulli numbers are well-known; they can be calculated as a straightforward exercise in analytic combinatorics, using the exponential generating function $B(z)$ of the Bernoulli numbers. In the present paper, we establish the asymptotic properties of a broad generalization of the Bernoulli numbers, namely, the coefficients of $(B(z))^\alpha$, where α is *any* positive real number. Our methods are sufficiently robust to give an additive asymptotic expansion to *any* desired degree of accuracy. This analysis requires us to precisely characterize the oscillations that occur in the asymptotic expansions of these generalized Bernoulli numbers. In addition to the rigorous proofs of the asymptotic properties, we display the results of several computations that shed insight on the oscillations in the asymptotics of the generalized Bernoulli numbers. (Received August 08, 2010)