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Yevgeniy Kostrov and **Zachary Kudlak*** (zachary.a.kudlak@uscga.edu), 15 Mohegan Ave
Pkwy, New London, CT 06320. *A Rational Difference Equation with Quadratic Terms.*

We give the character of solutions of the following second-order rational difference equation with quadratic denominator

$$x_{n+1} = \frac{\alpha + \beta x_n}{Bx_n + Dx_n x_{n-1} + x_{n-1}},$$

where the coefficients are positive numbers, and the initial conditions x_{-1} and x_0 are nonnegative such that the denominator is nonzero. In particular, we show that the unique positive equilibrium is locally asymptotically stable, and we give conditions on the coefficients for which the unique positive equilibrium is globally stable. (Received January 19, 2021)