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**Yevgeniy Kostrov** and **Zachary Kudlak\*** (zkudlak@monmouth.edu), Department of Mathematics, Monmouth University, 400 Cedar Ave, West Long Branch, NJ 07764. *On a Second-Order Rational Recurrence Relation with Quadratic Terms*. Preliminary report.

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

$$x_{n+1} = \frac{\alpha + \gamma x_{n-1}}{Bx_n + Dx_n x_{n-1} + x_{n-1}} \quad \text{for } n = 0, 1, \dots$$

where the coefficients are positive real numbers, and the initial conditions  $x_{-1}$  and  $x_0$  are nonnegative real numbers such that the denominator is nonzero. In particular, we show that there is a unique positive equilibrium, which is stable in some range of the parameters, and for which every solution converges to a unique period-two solution in another. (Received September 22, 2015)