Let $K$ be a complete, algebraically closed, non-Archimedean valued field, and let $\phi \in K(z)$ with $\deg(\phi) \geq 2$. In two recent articles, R. Rumely introduced the function $\text{ordRes}_\phi(x)$ on the Berkovich line and a canonical probability measure $\nu_\phi$ (the crucial measure) supported on the interior of the Berkovich line. What can be said of the convergence of the corresponding objects attached to the iterates of $\phi$? We answer this question by showing that, suitably normalized, the functions $\text{ordRes}_{\phi^n}(x)$ converge to the diagonal values of the Arakelov-Green’s function $g_\phi(x, x)$, and that the measures $\nu_{\phi^n}$ equidistribute to the invariant measure $\mu_\phi$. (Received September 16, 2014)