Let $X$ be a Hausdorff zero-dimensional topological space. Suppose $C_c(X)$ is the ring of all continuous real valued functions on $X$ which has countable range and $C^*_c(X)$ is the subring of $C_c(X)$ consisting of all bounded functions lying in $C_c(X)$. If $A_c(X)$ is an intermediate ring meaning that it is a ring lying between $C^*_c(X)$ and $C_c(X)$ then it is proved that the set of all maximal ideals of $A_c(X)$ with the well known hull-kernel topology is $\beta_0 X$, the Banaschewski compactification (the largest zero-dimensional compactification of a zero-dimensional Hausdorff space) of $X$. By defining the $m_c$-topology on $C_c(X)$ which is a countable analogue of the well known $m$-topology on $C(X)$, it is further proved that $X$ is a $P$-space if and only if each ideal in $C_c(X)$ is closed in $m_c$-topology. There are quite a few open questions related to these rings versus the topological structure of $X$. (Received June 27, 2020)