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The classical de la Vallée Poussin means provide a linear approximation method which is variation diminishing and therefore 'shape preserving'. We will show that this classical result of G. Pólya and I.J. Schoenberg holds also for a wider class of means whose periodic kernels  $(1 + \cos t)^\lambda$ ,  $\lambda = \frac{1}{2} + n$ ,  $n \in \mathbb{N}$ , have been singled out for study in a 2003 paper of S. Ruscheweyh and T. Suffridge. On the real axis, there are related variation diminishing properties of the functions  $u^m \operatorname{sgn} u$ , which are the Green's functions for the differential operator  $D^{(m+1)}$ . Work on this problem leads to an interesting variant of old results of Sylvester and Pólya. (Received September 15, 2008)