Title:	On Generalized Schönemann Polynomials
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Abstract:	It is known that a finite extension (K′, v′)/(K, v) of discrete valued fields is totally ramified if and only if the extension K′/K is generated by a root of an Eisenstein polynomial with respect to v having coefficients in K. In this paper, the authors extend the above result by giving a simple characterization of those extensions (K′, v′) of any henselian valued field (K, v) with the residue field of v′ separable over the residue field of v, which are generated by a root of some Generalized Schönemann polynomial belonging to K[x]. Indeed it is shown that (K′, v′)/(K, v) is such an extension if and only if K′/K is defectless and G v′/G v is a cyclic group, where G v ⊆ G v′ are the value groups of v, v′. This characterization implies that every finite extension of a local field is generated by a root of some Generalized Schönemann polynomial. An explicit formula is also given to calculate the Krasner's constant and the main invariant associated to such a root.
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