Title:	Corrigendum to “On prolongations of valuations to the composite field” [J. Pure Appl. Algebra 224 (2020) 551–558] (Journal of Pure an (551–558), (S0022404919301392), (10.1016/j.jpaa.2019.05.021))
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Abstract:	In this corrigendum, we indicate that the following theorem proved in [3] requires an extra assumption to hold. Theorem A [3, Theorem field K with valuation ring [Formula presented] and [Formula presented] be finite separable extensions of K which are linearly disjoint o closure S of [Formula presented] in the composite field [Formula presented] is a free [Formula presented]-module. If [Formula presente prolongations of v to [Formula presented] and [Formula presented] respectively, then [Formula presented]. We are thankful to Alain Sal bringing to our notice the following example which shows that the above theorem does not hold in general. Example 1 Let [Formula pre numbers with the 3-adic valuation [Formula presented] defined by [Formula presented], [Formula presented]. Then [Formula presented [Formula presented] as well as to [Formula presented], but [Formula presented] has two prolongations to [Formula presented]. In this n Theorem A and prove the following theorem which gives a necessary and sufficient condition for the equality “[Formula presented]” to h presented] be as in Theorem A with S a free [Formula presented]-module. Let [Formula presented] be a henselization of [Formula pres holds if and only if for each pair of prolongations [Formula presented] of v to [Formula presented] respectively, their henselizations cont of [Formula presented] are linearly disjoint over [Formula presented]. Proof Denote [Formula presented] by L. It is given that S is a free so [Formula presented] is defectless in L in view of [1, Theorem 18.6]. Hence [Formula presented] is defectless in [Formula presented]. all the prolongations of v to [Formula presented] and L respectively. For simplicity of notation, the henselizations of [Formula presented presented] will be denoted by [Formula presented]. It will be assumed that the henselizations under consideration are contained in a fix presented]. The degrees of the extensions [Formula presented], [Formula presented] and [Formula presented] will be denoted by [Forn presented] respectively. Since [Formula presented] are linearly disjoint over K, [Formula presented]. Hence by a well known equality (c [Formula presented] Fix a pair [Formula presented] and let [Formula presented] be a valuation of L extending the valuations [Formula p such a valuation exists in view of Lemma 2.C of [2]. Since the composite field [Formula presented] being a finite extension of [Formula contains L, we see that [Formula presented] contains [Formula presented]; consequently [Formula presented] Assume first that [Formu pair of prolongations [Formula presented] of v to [Formula presented] respectively, there exists a unique valuation [Formula presented] extends both [Formula presented]. On taking sum over all pairs [Formula presented] in (2), we have Comparing the above inequality w conclude that [Formula presented] for each pair [Formula presented]. Therefore [Formula presented] and [Formula presented] are linea presented] for [Formula presented]. Conversely assume that [Formula presented] and [Formula presented] are linearly disjoint over [Fo [Formula presented]. Fix a pair [Formula presented]. Let [Formula presented] be a valuation of L extending [Formula presented], [Form presented] are contained in [Formula presented]; consequently [Formula presented] It follows from (2) and (3) that if [Formula presente [Formula presented] with [Formula presented] linearly disjoint over [Formula presented], then [Formula presented] Recall that by Lemm presented]. It now follows from (4) and (1) that [Formula presented]. This completes the proof of Theorem 2. □ In view of Theorem 2, th Lemma 4.1 of [3] are valid with the extra hypothesis [Formula presented] and the same proofs carry over. However Corollaries 1.2, 1.3 general. It may be pointed out that Theorem A was already proved in [2] with an additional assumption in the following form. Theorem E valuation of a field K with valuation ring [Formula presented] and [Formula presented] be finite separable extensions of K which are line presented] denote the integral closures of [Formula presented] in [Formula presented] and [Formula presented] respectively. Assume tl [Formula presented]-modules and [Formula presented]. If [Formula presented] denote the number of prolongations of v to [Formula pre respectively, then [Formula presented]. However, Example 1 shows that the above theorem is false. In this example [Formula presente the discrete valuation ring [Formula presented] in finite extensions of [Formula presented] with [Formula presented] are free [Formula p discriminants of [Formula presented] are coprime. If [Formula presented] denotes the ring of algebraic integers of [Formula presented], Theorem 4.26]), the composite ring [Formula presented] is integrally closed; consequently [Formula presented] is integrally closed beca the integral closure in [Formula presented] of the localization of [Formula presented] at the prime ideal [Formula presented] is given by [Formula presented]. So the hypothesis of Theorem B is satisfied. But as pointed out in the example, here [Formula presented]> and [F indicated that the result of Theorem 1.1 of [2] holds with the extra assumption [Formula presented] and the proof given in [2] can be ca Theorem 1 in the proof of Step III instead of Remark 2.1 of [2]. It is still an open problem whether Theorem 1.1 of [2] holds without the I

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