ERRATA FOR “RATIONAL POINTS ON VARIETIES”
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This is an errata list for the book


- Definition 1.3.1: “direct product” should be “finite direct product”.
- Remark 3.5.62: “Theorem 3.5.59” should be “Definition 3.5.59”.
- Section 3.5.15: The sentence “But $X'_R$ need not be smooth.” is correct, but it would be more to the point to say “But $X'_R$ need not be regular.”
- Proof of Theorem 5.3.1: The actions were not specified clearly. The left translation action on $G$ induces a right $G$-action on $A$, which can be turned into a left $G$-action on $A$ (in which $g$ acts as right action of $g^{-1}$). It is this left $G$-action on $A$ and the induced contragredient left $G$-action on $A^*$ that are used in Step 2.
- Thanks to the proof of the purity conjecture [Čes18], some simplifications are possible:
  - In Theorem 6.8.3, the “caveat” can be simplified to “the caveat that one must exclude the $p$-primary part of all the groups if there exists $x \in X^{(1)}$ such that $k(x)$ is imperfect of characteristic $p$”.
  - In Corollaries 6.8.5 and 6.8.7, the caveats are unnecessary.
  - In the proof of Proposition 6.9.10, the $\text{char } k = 0$ proof then works in arbitrary characteristic.
- Warning 6.8.4: $\text{Br } k(X)$ should be $\text{Br } k(X)$.
- Proof of Lemma 6.9.8: Where Theorem 6.9.7 is invoked, Corollary 6.7.8 should be mentioned too.
- Theorem 8.4.10 and Corollary 8.4.11: Fei Xu pointed out that it is necessary to add the hypothesis “If $\text{char } k = p$, assume that $X$ is proper.” In the proof of Theorem 8.4.10, change the sentence starting “For any nonarchimedean $v \in S$” to “For any nonarchimedean $v \in S$, there are only finitely many possibilities for the $k_v$-scheme $F^{-1}(x_v)$ as $x_v$ ranges over $X(k_v)$: when $\text{char } k = 0$, this follows since $k_v$ has only finitely many extensions of each degree; when $\text{char } k = p$, use Krasner’s lemma (Proposition 3.5.74) and compactness of $X(k_v)$.”
- Remark 8.4.12: Change “irrational” to “rational”, and “dominant morphism $\mathbb{P}^1 \to X$” to “morphism $\mathbb{P}^1 \to X$ inducing a surjection $\mathbb{P}^1(\mathbb{A}^S) \to X(\mathbb{A}^S)$”.
- Section A.4: Juan Climent Vidal pointed out that $\{x, \{y\}\}$ does not necessarily determine $x$ and $y$, and that it should be changed to Kuratowski’s definition $\{\{x\}, \{x, y\}\}$.

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REFERENCES


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