1994a Motives over Finite Fields (Seattle 1991)

(Motives (Seattle, WA, 1991), 401–459, Proc. Sympos. Pure Math., 55, Part 1, Amer. Math. Soc., Providence, RI, 1994.)

The following footnote was removed from both articles by the AMS without the author's permission:

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Also numerous changes were made to the article by a copy editor who neither understood the text nor recognized that even a minor change can affect the meaning.

Finally, the author's standard (Chicago Manual of Style) method of citation was changed by the AMS to a barbaric numbering system, and (of course) they got it wrong.[1]

I recommend reading the original manuscripts, available on my web site, rather than the published version.

Erratum

In the following, the page numbers refer to the manuscripts.

p6^4. $C^d(V \times V)$ should be $A^d(V \times V)$.

p6. The formula should read ("rank" has been omitted)

$$\operatorname{rank} h(V) = \sum \operatorname{rank} h^i(V) \qquad \text{(rather than } \sum (-1)^i \operatorname{rank} h^i(V)\text{)}.$$

p11. In the proof of Proposition 1.15, "Milne 1986" should refer to my article in the Amer. J. Math. 1986, not to ADT (in the published version, this is p411, and the reference is [22, 8.6]).

p38. The proof of Proposition 3.11 is garbled.

Let L be a CM-subfield of $\mathbb{Q}^{\mathrm{al}}$, finite and Galois over $\mathbb{Q}$. Then

$$H^1(\mathbb{Q}, P_0^L) = \operatorname{Br}(E/F)$$

where E is the fixed field of the decomposition group $D(w_0)$ and F is the largest real subfield of E. This implies (a).

[1] Krantz has adopted a format for making bibliographical references which, regrettably, in my opinion, has become very popular in the mathematical community in recent years. He assigns to each item in the bibliography a code, consisting of three or more capital letters. For example, the treatise of Dunford and Schwartz gets the code [DUS]. There doesn't seem to be any particular rule as to how the code for a particular item is constructed. It is usually formed from some combination of letters from the authors' last names, but not always. For example, the book on Fourier series in Euclidean space by Elias Stein and Guido Weiss has the code [STG]. Perhaps this particular code was chosen in order that the codes not occur out of alphabetical order in the bibliography itself, something that frequently occurs when this method is adopted. There are two separate items in Krantz's bibliography having the same code, [LAN]. I find this method of giving references opaque and unpleasant to use. Since the codes are constructed arbitrarily, I can never guess what book or article they stand for, and, after having looked the reference up, I can never remember what the code means the next time I see it. It seems to me that it would be much more helpful to the reader to give the authors' last names and the date of publication: for example, "Dunford-Schwartz, 1958". I counted 200-some references in Krantz's book, about one every 2 pages. I estimate that giving references in the longer form would add less than 2 pages to this 370-page book.
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For a torus T, let $\widetilde{T}$ be the universal covering of T, i.e., $\widetilde{T}$ is the projective system $(T_n, T_{mn} \xrightarrow{m} T_n)$ with $T_n = T$ for all integers $n \geq 1$. For any covariant functor H to abelian groups, $H(\widetilde{T}) = \mathrm{Hom}(\mathbb{Q}, H(T))$; in particular, $H(\widetilde{T}) = 0$ if $H(T)$ is torsion. Thus,

$$H^1(\mathbb{Q}, \widetilde{(P^L)^0}) = \mathrm{Hom}(\mathbb{Q}, \mathrm{Br}(E/F)) = 0.$$

The map $P^0 \to (P^L)^0$ factors through the map $\widetilde{(P^L)^0}$, and so the map $H^1(\mathbb{Q}, P^0) \to H^1(\mathbb{Q}, (P^L)^0)$ is zero. A similar argument applies to show the other groups are zero.

p38. In the diagram, replace $\oplus_v H^2(\mathbb{Q}_p, \ldots$ with $\oplus_\ell H^2(\mathbb{Q}_\ell, \ldots$.

p47. Replace the last sentence of the first proof with: According to (3.11b), $H^1(\mathbb{Q}_\ell, P(p^\infty)) = 0$ torsor is trivial: $\alpha \circ \zeta_\ell \approx \zeta'_\ell$.