1972a On the arithmetic of abelian varieties

(Invent. Math. 17, 177-190).

Erratum

In Remark 2 on p. 184, I say that "It is possible to deduce the zeta function of $M \otimes_R A$ from that of A and the representation of G on M." I'm not sure what I was thinking of when I wrote that. In fact, it is not always possible to deduce a local factor of the zeta function of $M \otimes_R A$ from the corresponding factors of the zeta functions of A and M, as the following example of Niko Naumann shows.

Consider over $\mathbb{Q}_2$ the curves

$$E_1 : y^2 = x^3 + 1 \qquad E_2 : y^2 = x^3 + 3.$$

When twisted by the same representation corresponding to $4^{1/3}$, they become

$$E_1' : y^2 = x^3 + 16 \qquad E_2' : y^2 = x^3 + 3.16.$$

All curves have additive reduction, except E_1' has good reduction. In particular the L-series of E_1 and E_2 coincide, but cease to do so after being twisted by the same representation.