ERRATA

Corrections to

THE GALOIS GROUP OF A POLYNOMIAL WITH TWO INDETERMINATE COEFFICIENTS

S. D. COHEN

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We make modifications to the results of [3], principally Theorem 2 and Corollary 3, to take account of an error in Lemma 5 which arises when wild ramification is involved. (This came to light following a query by M. Fried to whom I am grateful.) In fact, although some of the assertions of [3] conflict with known results, we show that our conclusions remain true (and can even be strengthened) under modified hypotheses. We also take advantage of the now complete classification of finite doubly transitive groups to simplify the details. In our discussion (which proceeds with the same notation) we can assume that p is a prime.

Now the proof of Lemma 5 is valid provided the cycle pattern μ is *tame*, i.e., provided $\mu_i = 0$ whenever $p|i$. When μ is wild the claim that necessarily $G(h, F\{t\})$ is cyclic is unjustifiable, see [2], §8, although further study may reveal what alternative deductions could be made. Simply observe here that then the p-Sylow group of $G(h, F\{t\})$ supplies non-trivial elements σ of G whose cycle lengths are powers of p and for which $\lambda(\sigma) \leqq \sum_{p|i} i\mu_i$. In particular, the validity of Lemma 5 and Corollary 6 is restored if the following sentence is added to their hypotheses. *Suppose that either μ is tame or $\mu = (1^{(n-p)}, p^{(1)})$.*

Clearly Lemma 7 and so Theorem 1 remain valid as stated. Indeed, by the above, $G = S_n$ whenever there exists $(\beta_1, \beta_2, \beta_3)$ in F^3 with $\mu(B) = (1^{(n-2)}, 2^{(1)})$ (even if $g(X)$, X^a and X^b are linearly dependent over $F(X^p)$, e.g. whenever $p = 2$). Thus, for example, if $p = 2$, n is odd and $f(X) = X^n + tX^2 + u$ then $G = S_n$.

Next, observe that the purported existence of an automorphism σ_i in Lemma 8 is actually only established when $\mu(\sigma_i)$ is tame or a p-cycle. (Note however from the proof that, if $p \nmid c$ then certainly $\mu(\sigma_4)$ is tame unless $g(X) = g_1(X^p)X^{a*}$, $p \nmid a$). Consequently, the conclusion "$G \not\subseteq A_n$" of Lemma 9 is conditional on one of the $\mu(\sigma_i)$ being tame (or, if $p = 2$, a transposition) as well as odd.

In the revised version of Theorem 2 which follows, the condition $p \nmid (a, n)$ is replaced by the condition $p \nmid (a(n-a), c)$ (which although generally stronger does allow the possibility that $p|(a, n)$ provided