THE RATIONAL SOLUTION OF THE DIOPHANTINE EQUATION $Y^2 = X^3 - D$.

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Addenda and Corrigenda.

1. I overlooked that theorem IV was first published by Nagell (my reference [32]).

2. Dr. E. S. Selmer tells me that my conjecture I of § 25 cannot be correct, e. g. for $D = -61^2$, $y^2 = x^3 + 61^2 t^6$. Here a possible μ is the unit $\eta = 1 - 16\delta + 4\delta^2$ where $\delta^3 = 61$ and the congruence

$$x + t^2\delta^2 \equiv \eta\alpha^2$$

is soluble modulo any power of 2 (the only relevant modulus), indeed with $x = 1$, $t = 2$. On the other hand Dr. Selmer has proved that $y^2 = x^3 + 61^2 t^6$ is insoluble.

3. An ingenious method of investigating the generators of $Y^2 = X^3 - D$ using only the properties of quadratic fields has just been given by V. D. Podsypanin (Mat. Sbornik *24* (1949) 391–403). He gives a table of generators for $|D| < 90$ but a comparison with my table for $|D| \leq 50$ shows a number of errors:—

(i) For $D = 48$ Podsypanin gives two generators (4, 4, 1), (73, 595, 3) but actually the parameter of the second solution is just 3 times that of the first.

(ii) No generators are given by Podsypanin for $D = \pm 43, 50$ and insufficient generators for $D = -15, +39$.

4. The following two misprints have occurred:—

(i) Page 265, proof of lemma 10: For "$\nu H a^2 = e^2 + 2ef - f^2 = (e+f)^2 - 2f^2$ "read" $\nu H a^2 = e^2 + 2ef - 2f^2 = (e+f)^2 - 3f^2$".

(ii) Page 271, line 6: For "units for all in Wolfe" read "units for all $D \leq 100$ in Wolfe."