1.– Nicolas Addington pointed out to us that the example in Section 5.4.2 of the published version is wrong. The equation should be

$$x_1^3+x_2^3+x_3^3+x_1^2x_2+x_2^2x_3+x_2x_4x_5+x_3^2x_1+x_1x_2x_3+x_1x_4^2+x_1^2x_4+x_2x_5^2+x_2^2x_5 \\ +x_4^2x_5+x_4x_5^2+x_3x_6^2+x_3^2x_6+x_4^2x_6+x_4x_6^2+x_5^2x_6+x_5x_6^2+x_4x_5x_6=0.$$

It defines a smooth cubic fourfold $X \subset \mathbf{P}^5_{\mathbf{F}_2}$, the only $\mathbf{F}_2$-line contained in X is the line $\langle(0,0,0,0,1,1),(0,0,0,1,0,1)\rangle$, and X contains 13 $\mathbf{F}_2$-points.

2.– Kiran Kedlaya spotted an error in the published version of the proof of Theorem 5.2 and provided a correction which led to an improved statement. He also kindly provided Proposition 5.5 and its proof.

3.– Daniel Bragg spotted an error in the published version of the statement of Theorem 4.11: in the case $p \equiv 1 \pmod 3$ and $n=4$, one has

$$P_n^0(X^n_{\mathbf{F}_p},T)=(1-p(a^2-2p)T+p^4T^2)(1-p^2T)^{20}.$$

4.– Equation (5) in the published version should be

$$Q_1(Y,T)=T^{2m}+a_1T^{2m-1}+\cdots+a_{m-1}T^{m+1}+a_mT^m+qa_{m-1}T^{m-1}+\cdots+q^{m-1}a_1T+q^m.$$

The arxiv version (which is a slightly expanded version of the published text) include corrections of all the points mentioned above.