$$\beta_n = \overbrace{11\cdots1}^{u_n}(b) \qquad (n \geq 1)\ ;$$

then

(9) $$\prod_{i=0}^{m} [1 + (b-1)\beta_{n+i}]^{\alpha_i} = b^{\beta} \qquad (n \geq 1)\ .$$

Proof. Since

$$\beta_n = \frac{b^{u_n} - 1}{b - 1} \qquad (n \geq 1)\ ,$$

we have

$$b^{u_k} = 1 + (b-1)\beta_k$$

for $k \geq 1$ and the result readily follows.

REFERENCES

1. L. E. Dickson, History of the Theory of Numbers, Vol. 1, p. 385.
2. Ibid, p. 19.

ON A CONJECTURE OF DMITRI THORO*

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Denoting the n^{th} term of the Fibonacci sequence 1, 1, 2, 3, 5, ···, by F_n, where $F_{n+2} = F_{n+1} + F_n$, it is well known that

$$F_n^2 - F_{n-1}F_{n+1} = (-1)^{n+1}\ .$$

If odd prime p divides F_{n-1}, then

$$F_n^2 \equiv (-1)^{n+1} \pmod{p}\ ,$$

so that $(-1)^{n+1}$ is a quadratic residue modulo p. Clearly, for n = 2k, this implies -1 is a quadratic residue modulo p, and accordingly, $p \equiv 1$ (mod

[Continued on page 537.]