Corrigendum to the paper
“A problem of Erdős concerning power residue sums”
(Acta Arithmetica 13 (1968), pp. 131-149)

by
P.D.T.A. ELLIOTT (Nottingham)

The author would like to draw attention to the following oversights.
1. In the statement of Lemma 3 the condition that \( l \) be a power of \( g \)
has been inadvertently omitted, and that \( g \) is a prime.
2. The results of Lemmas 4, 5 are correct only if all the \( g_i \) under
consideration are odd. If one of the primes \( g_i \) has the value 2 a slight change
has to be made. This is due to the fact that when \( m \geq 3 \) the Galois group
of the cyclotomic field generated by a primitive \( 2^m \)-th root of unity is
the direct product of cyclic groups of order 2 and \( 2^{m-1} \). Thus that cyclotomic
field has two quadratic subfields, namely \( Q(\sqrt{-1}) \) and \( Q(\sqrt{2}) \).
Accordingly the definition of \( c(k) \) (with an attendant change in the defini-
tion of \( n_i \)) becomes \( 2^{-t} \), where

\[
t = \begin{cases} 
0 & \text{if } 2 \nmid k, \\
\text{the number of odd primes } g_i \text{ dividing } k \text{ and satisfying } g_i \equiv 1 \pmod{4} & \text{if } 2 \mid k, \\
\text{the number of odd primes } g_i \text{ dividing } k & \text{if } 4 \mid k, \\
\text{the number of primes dividing } k & \text{if } 8 \mid k.
\end{cases}
\]

This change does not affect any succeeding argument. Indeed we
only use the fact that \( t \) is bounded by \( k \), and has the value zero when \( k \)
is an odd prime.
3. On page 137 line 22 for \( 2^{-t'} \) read \( 2^{-t} \).

We note that we do not mention separability in for example Lemma 1,
since the fields we are considering are of characteristic zero and so automa-
tically separable. Moreover, for each field \( F \), \( \overline{F} \) is its ring of integers.

Finally we notice that unless otherwise stated the primes \( g_i \) are
arbitrary until we reach p. 146. For pp. 146-149 they then become the
rational primes in increasing order.

UNIVERSITY OF NOTTINGHAM

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