A congruence for the second factor of the class number of a cyclotomic field (Corrigendum)

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Let $h$ denote the class number of the cyclotomic field $\mathbb{Q}(\zeta)$, where $\zeta = e^{2\pi i/p}$, $p > 3$; also let $h_1, h_2$ denote the first and second factors, respectively, of the class number. It is proved in [1] that

$$h_2G = \pm h_1 \pmod{p},$$

where

$$G = (-1)^{\mu+1}2^{\mu+2}G_0^{-1}C \pmod{p}.$$  

It has been pointed out by T. Metsänkylä [2] that $G_0$ is incorrectly defined in [1]. The error occurs in (2.9); it is easily seen that the left member should be multiplied by $\zeta^2$. Consequently the left members of (2.13), (2.14) and the formula at the top of p. 31 should all be multiplied by $\zeta^2$. It follows that

$$G_0 = \vert g^m \vert$$

$$(j = 0, 1, \ldots, m-2; \; \mu = 1, 2, \ldots, m-1),$$

so that $G_0$ is the difference product of the quadratic residues $\neq 1$ of $p$.

The last paragraph of § 3 should be omitted.

On p. 28, line 8, $h_2$ should be replaced by $h$.

References
