

**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  $Q(\zeta)$ , 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

$$h_2 G \equiv \pm h_1 \pmod{p},$$

where

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

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  $\zeta^n$ . Consequently the left members of (2.13), (2.14) and the formula at the top of p. 31 should all be multiplied by  $\zeta^n$ . It follows that

$$G_0 = |g^{2nj}| \quad (j = 0, 1, \dots, m-2; n = 1, 2, \dots, m-1),$$

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**

- [1] L. Carlitz, *A congruence for the second factor of the class number of a cyclotomic field*, Acta Arith. 14 (1968), pp. 27-34.
- [2] T. Metsänkylä, *Congruences modulo 2 for class number factors in cyclotomic fields*, Annales Academiæ Scientiarum Fennicæ Series A, I. Mathematica 453 (1969), pp. 1-11.