ERRATA

Some Metrical Theorems in Number Theory II

WALTER PHILIPP

This paper appeared in volume 73(1970) pp. 447–458. The term $\Phi(\tau(N))$ in the inequality in the middle of p. 452 appears at a wrong place. It should read

$$((\Phi(N + \tau(N)) - \Phi(\tau(N)))^{-\frac{1}{2}} - \Phi^{-\frac{1}{2}}(N + \tau(N)))^2 \cdot \int \sum_{n \le N} x_{Nn}(x) P(dx) \le \left(\frac{\Phi(\tau(N))}{\Phi(N)}\right)^2.$$

Secondly, instead of estimating the variance of $\sum_{n \le \tau(N)} x_{Nn}(x)$ in the last step of the proof of Theorem 2 on p. 452 we observe that this sum is bounded by $\tau(N)$ and thus can be neglected if we choose $\tau(N) = o(\Phi^{\frac{1}{2}}(N))$. Notice that the variance has been calculated with respect to P rather than μ. The same error occurs in the last step of the proof of Theorem 4 on p. 453. We replace this step by an application of the individual ergodic theorem and conclude that

$$M^{-1} \sum_{n \le M} f(T^n) \to 0 \text{ a.e.}$$

and hence tends towards 0 in measure with respect to μ. Setting $M = [\log N]$ Theorem 4 follows from (13), (14) and a well-known theorem on the convergence of distribution functions. (See e.g. Loève, Probability Theory, Princeton, 1963, p. 168 c.)