Correction to

"On the growth of entire and meromorphic functions of infinite order"

By

CHONG JI DAI, DAVID DRASIN AND BAO QIN LI

Journal d'Analyse Mathématique 55 (1990), 217–228

W. Bergweiler and H. Bock have observed a gap in the proof of Theorem 2 of [1]. We are given an increasing function $\phi(x)$ with

$$\int^{\infty} dx/\phi(x) = \infty, \tag{1}$$

and the purpose of Theorem 2 is to use ϕ to produce examples to show that Theorem 1 of [1] is sharp.

The construction of Theorem 2 is based on a conformal mapping of a strip Ω, where Ω is described in §3 of [1]. However, Ω is defined in terms of ϕ, and unless some properties on ϕ in addition to (1) are assumed, the conformal mapping $\zeta(z)$ will grow so rapidly that (4.4) of [1] will fail. A similar problem occurs in [2] (reference [10] of [1]), where it is shown that if in addition to (1) we assume

$$\phi'(x) = o(\phi(x)) \qquad (x \to \infty), \tag{2}$$

then the inequality of the Ahlfors distortion theorem is asymptotically sharp (see the discussion after (2.10) in [2]. To conform with the notation of [2], write $\Phi(y) = y\phi(\log y)$ where Φ is as in [2]). Thus Theorem 2 does hold if (2) is assumed, but then conclusion (1.6) (but not (1.5)) is contained in [2]. Perhaps (2) is not necessary, but we do not know if (1) alone is sufficient for Theorem 2.

We regret the oversight.

References

1. C. J. Dai, D. Drasin and B. Q. Li, *On the growth of entire and meromorphic functions of infinite order*, J. Analyse Math. **55** (1990), 217–228.

2. I. I. Marchenko and A. I. Shcherba, *Growth of entire functions*, Siberian Math. J. (English Transl.) **25** (1984), 598–606.