The transformation T from P, (ξ, η), to P', (ξ', η'), where $\xi' = y(Z_3 + p) - H$, $\eta' = \dot{y}(Z_3 + p)$, is topological in $\bar{\Delta}$. We shall show that there is a fixed point of T in Δ, which then corresponds to the desired periodic Γ. Suppose there is no fixed point of T in Δ. Then a continuous vector, or arrow, $P \to P'$, exists for all points P of $\bar{\Delta}$. Now the disposition of the arrows at boundary points of Δ is a follows. If P is a B_+ point, TP (considered as a point of $\mathfrak{R}$ at Z_3) *corresponds to a* Γ' *through the* + *end of* (*the first*) G_1; *further since* Γ *is in* $S^*(Z_2 + p)$ [Lemma 34], *it has arrived at* G_1 *from an* S^*. *By Lemma* 35 (i) *its r.p. is distant* $O(\zeta)$ *from* P_+. The arrow from such a P points nearly at P_+. Similarly for B_- points. A boundary point on XY corresponds to a Γ through all the G, G'; hence its $|\dot{y}(Z_3 + p)| < L_3^* k^{-1} = \eta_0$, by Lemma 34. TP has accordingly $|\eta| < \eta_0$, and the arrow from such a P has a downward component. Similarly one from a boundary point on ZW has an upward one. It follows from these facts, and the continuity of the arrow in $\bar{\Delta}$, *alone*, that when P describes a simple closed contour whose maximum distance from the boundary of Δ is small, the arrow rotates either through $+2\pi$ or -2π (which it is depends on the disposition of the signs on the two continua joining XY, ZW, and the sense of description). This is incompatible with there being no fixed point in Δ.

ERRATA

CORRECTIONS TO THE PAPER: "*On non-linear differential equations of the second order. III. The equation* $\ddot{y} - k(1 - y^2)\dot{y} + y = b\mu k \cos(\mu t + \alpha)$ *for large* k, *and its generalizations*" BY J. E. LITTLEWOOD:

Page 277, line 11 *Read* $O(A(d)k^{-1})$ *for* $O(A(d, d')k^{-1})$

286, line 16 *should read*

$$V' + V = -\left(\tfrac{4}{3} - 2b\right)k - \int_U^{U'} y\,dt, \qquad (1)$$

299, Fig. 5 $(V^* + M)'$ *should be higher.*