12. Proof of Theorem 5. Assertion I of the theorem is an immediate consequence of the Eneström-Kakeya theorem which, in view of (6.12), may be applied to the second form of $Q_m(w)$ in (4.7).

Returning to the variable

$$z = R_m w ,$$

we may rewrite (4.7) as

$$s_m(z) = a_m z^m Q_m(z/R_m) ;$$

hence assertions II and III (ii) follow from Lemma 11.1. With regard to B(h) we may take it to be any positive quantity satisfying (2.43) and

$$B(h) > \max\{B_o, \tilde{B}_o\}.$$

Assertion III (i) of Theorem 5 follows from Hurwitz' theorem and the uniform convergence $s_m(z) \to E_{1/\lambda}(z)$ $(|z| \leq B)$.

13. Proof of Theorem 1. By (8.28) of Lemma 8.1,

$$\text{(13.1)} \quad \left(\frac{2}{\pi\lambda m}\right)^{1/2} Q_m\left(\frac{1}{1 - \left(\frac{2}{\lambda m}\right)^{1/2} \zeta}\right) \to e^{\zeta^2}\left(1 - \frac{2}{\pi^{1/2}} \int_o^{\zeta} e^{-t^2}\, dt\right)$$

$$= e^{\zeta^2} \operatorname{erfc}(\zeta) \qquad (m \to +\infty)$$

uniformly on every compact subset of the ζ-plane and, in particular, in the disk

$$\text{(13.2)} \qquad |\zeta| \leq t \qquad (t > 0) .$$

Define $\zeta_{1,m}$ by the relation