NOTE ON A PAPER BY MANDELBROJT AND MacLANE

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The results obtained by J. Dufresnoy and J. Ferrand[1] enable us to extend Theorems I, II, and III of the preceding paper to more general strip regions.

Let $g_i(\sigma)>0$ $(i=1, 2)$ be defined and continuous for $\sigma \geqq a$ $(-\infty \leqq a < \infty)$ with $\lim_{\sigma\to\infty} g_i(\sigma)=\pi/2$. Let

$$S(\sigma) = \pi \int_c^\sigma \frac{du}{g_1(u) + g_2(u)} \cdot$$

Let Δ_s be the domain in the s-plane $(s=\sigma+it)$ defined by $-g_1(\sigma)<t<g_2(\sigma)$.

If $g_1(\sigma)=g_2(\sigma)$ we have the symmetrical domain considered above.

Lemmas I, II, III, and IV are true for the new domain if we suppose that $g_1(\sigma)$ and $g_2(\sigma)$ separately satisfy all the conditions given for $g(\sigma)$: $g_1(\sigma)$ and $g_2(\sigma)$ must be of bounded variation[2] and satisfy the condition (11), $|g_i'(\sigma)|<A$, $g_i'(\sigma+h)-g_i'(\sigma)>-Ah$. The proofs of Theorems I, II, and III are the same, with the new function $S(\sigma)$.

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(1) C. R. Acad. Sci. Paris vol. 220 (1945) pp. 189, 873.

(2) In fact the conclusions hold if this first condition is replaced by $\int^\infty |g_i'(\sigma)|^2 d\sigma < \infty$.