DOMAINS BOUNDED BY ANALYTIC JORDAN CURVES

BY R. J. SIBNER[1]

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It is well known that repeated application of the Riemann mapping theorem shows that any finitely connected plane domain is conformally equivalent to a domain whose boundary components are analytic curves. A corresponding result has not previously been shown for arbitrary domains of infinite connectivity—the only cases being those domains for which the Koebe conjecture is known to be true (cf. [2]).

We will show that *any domain with countably many boundary components is conformally equivalent to a domain bounded by analytic Jordan curves and points.*

1. A *limit boundary component* of a domain is a boundary component, at least one of whose points is a point of accumulation of points on other boundary components. A *weak* limit boundary component of a domain is a point limit boundary component which corresponds to a point under *every* conformal map of the domain. A *circle domain* is a domain bounded by circles and points.

In a recent paper [2, Theorem 4] the author has obtained a new proof, using quasiconformal mappings, of the following result due to Strebel: *If D is a domain with weak limit boundary components, then D is conformally equivalent to a circle domain.*

An examination of this proof shows that the assumption that the limit boundary components are point boundary components and that they are weak is used *only* in the last step—to show that the images of the *limit* boundary components are points. Consequently, we obtain

THEOREM 1. *Let D be an arbitrary planar domain. Then D is conformally equivalent to a domain K, all of whose isolated boundary components are circles or points.*

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