Revista Colombiana de Matemáticas
Volumen X (1976), pág. 93

A CORRECTION TO MY PAPER : "SOME TOPOLOGICAL EXTENSIONS OF PLANE GEOMETRY"

by

Harold BELL

THEOREM 4.4 and its proof, in my paper : *Some topological extensions of plane geometry,* Rev. Colombiana Mat., 1975, IX, 125 - 153, should appear as follows : *Let B be a compact set for which the interior of $T_K(B)$ contains A. Let $\mathcal{J} = \{ J : J \in \mathcal{J}_A(e)$ for some $e \in B \}$, and let $M = \bigcup \{ J : J \in \mathcal{J} \} \cup A$. Then the boundary of $T_K(M)$ is a simple closed curve provided that $e(K) \notin \overline{M}$.*

Proof : Let $D_1, D_2, D_3, \ldots$ be a sequence of simple closed curves such that $M \subset T_K(D_{n+1}) \subset T_K(D_n)$ for $n = 1,2,3,\ldots$, and each component of $D_n - M$ has diameter $< 1/n$. Since A is compact there is a $d > 0$ such that

$$\{ z : d(z, A) < d \} \subset T_K(B) \text{ and } d(e(K), A) > d.$$

If $e \in E(A)$ and $d(e, A) < d/3$ then there is an $f \in L_e \cap B$. It follows that $\bigcup \mathcal{J}_e(A) \subset T_K(I \cup M)$ for some $I \in \mathcal{J}_f(A)$. It follows that for each $\varepsilon > 0$ there is a positive integer N such that if $m \geq N$ and C is a component of $D_m - M$ then the diameter of $(T_K(C \cup M) - T_K(M))$ is less than ε. A standard uniform convergence argument together with the fact that $T_K(M)$ has no cut points then yields that the boundary of $T_K(M)$ is a simple closed curve.