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

by

Harold BELL

THEOREM 4.6 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 $TK(B)$ contains $A$. Let $J = \{ J : J \in A(e) \text{ for some } e \in B \}$, and let $M = \bigcup \{ J : J \in J \} \cup A$. Then the boundary of $TK(M)$ is a simple closed curve provided that $e(K) \not\in M$.

Proof: Let $D_1, D_2, D_3, \ldots$ be a sequence of simple closed curves such that $M \subset TK(D_{n+1}) \subset TK(D_n)$ 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

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

If $e \in E(A)$ and $d(e, A) < d/3$ then there is an $f \in L_e \cap B$. It follows that $U_j e(A) \subset TK(I \cup M)$ for some $I \in J(f)(A)$. 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 $(TK(C \cup M) - TK(M))$ is less than $\varepsilon$. A standard uniform convergence argument together with the fact that $TK(M)$ has no cut points then yields that the boundary of $TK(M)$ is a simple closed curve.