Chapter 1

LOCALLY CONNECTED CONTINUA

1.1 Basic examples: an arc, a circle, n-cube $\mathbb{I}^n$, Hilbert cube

1.2 Graphs

(a) Elementary examples: an arc, a circle, a noose, a figure eight, a θ-curve

(b) Acyclic graphs = trees.

(c) planability of graphs; the Kuratowski graphs $K_{3,3}$, K_5; Whyburn's example of an open map from a planar onto a nonplanar graph

(d) Problem of Königsberg bridges; Euler's solution

1.3 Dendrites

A dendrite is a locally connected continuum containing no simple closed curve. By the order of a point p in a dendrite X, writing $\operatorname{ord}(p, X)\operatorname{ord}(p, X)$, we mean the Menger-Urysohn order, see [Kuratowski 1968, §51, I, p. 274], or equivalently, the order in the classical sense, i.e., the number of arcs emanating from p and disjoint out of p (see [Charatonik 1962, p. 229] and [Lelek 1961, p. 301]).

In this chapter the term of an end point of a continuum is always used in the sense of a point of (Menger-Urysohn) order 1, i.e., p is an end point of X provided that $\operatorname{ord}(p, X) = 1$. For dendrites this concept coincides with one of an end point in the classical sense, but not with the notion of an end point of an arc-like continuum as defined e.g. in [Bing 1951, p. 660].