2. There exist dendrites X and Y, both admitting open mappings onto arcs, such that $Y \subset X$ and there is no open mapping from X onto Y (see [Charatonik et al. 1994, Example 6.67, p. 34])

   Indeed, in an arm A of a simple triod Y fix a sequence $\{p_n\}$ of points of A converging to the center of the triod, and take a sequence $\{A_n\}$ of arcs such that $Y \cap A_n = \{p_n\}$ and that $\lim diam_n = 0$. Then $X = Y \cup \bigcup \{A_n : n \in \mathbb{N}\}$ is the needed dendrite.

3. There exists a dendrite which does not admit any open mapping onto an arc and which is the union of two subdendrites admitting open mappings onto an arc (see [Charatonik et al. 1994, Example 6.69, p. 34]).

4. There is a bounded chain of dendrites (ordered with respect to open mappings) that has no supremum (see [Podbrdský et al. 2001]).

5. There is in the plane an uncountable family of dendrites every two members of which are incomparable by r-mappings (see [Sieklucki 1959]).

6. There is a family of dendrites ordered with respect to r-mappings similarly to the segment (see [Sieklucki 1961]).

1.4 Cyclic examples of locally connected continua

(a) Claytor examples of nonplanable curves

(b) Menger compacta, Sierpiński universal plane curve, Menger universal curve; homogeneity of these continua

(c) Other examples

1.4.1 Menger universal continua

The Menger universal continuum M_n^m, for $1 \leq n < m$ [Menger 1926], can be defined as follows [Engelking 1978, pp. 121–122].

Let $\mathcal{F}_0 = \{I^m\}$. Inductively, suppose a collection $\mathcal{F}_k$ of cubes has been defined for $k \geq 0$. Divide each cube $D \in \mathcal{F}_k$ into $3^{m(k+1)}$ congruent cubes with edges of length $\frac{1}{3^{m(k+1)}}$. If $\mathcal{F}_{k+1}(D)$ is the collection of all these cubes that intersect n-dimensional faces of D, then let $\mathcal{F}_{k+1} = \bigcup \{ \mathcal{F}_{k+1}(D) : D \in \mathcal{F}_k \}$.

Define

$$M_n^m = \bigcap_{k=0}^{\infty} \left(\bigcup \mathcal{F}_k \right).$$

The most popular continua are M_1^2, widely known as the Sierpiński universal plane curve or the Sierpiński carpet [Sierpiński 1916], and M_1^3, called the Menger universal curve [Menger 1926]. These particular curves are discussed separately.