

1116-A1-604 **Jerry Lodder*** (jlodder@nmsu.edu), Mathematical Sciences, Dept. 3MB, Box 30001, New Mexico State University, Las Cruces, NM 88003. *Teaching with historical curricular modules: The Juxtaposition of Prüfer and Borůvka.*

We explore how the discrete structure known as a *tree* evolved from the work of Arthur Cayley (1821–1895) in displaying the logical branching of partial differentiation to the formulation of an algorithm for finding a minimal spanning tree articulated by Otakar Borůvka (1899–1995). Excerpts from these historical sources along with readings from the work of Heinz Prüfer (1896–1934) form the core of a teaching module for topics in discrete mathematics, graph theory or algorithm design. Briefly, Cayley identifies a pattern in the enumeration of (labeled) trees on n -vertices, although he does not provide a rigorous proof of this result. Prüfer develops a one-to-one correspondence between labeled trees and so-called Prüfer symbols, from which “Cayley’s formula” follows. Finally, Borůvka describes an algorithm for finding a minimal spanning tree over the domain of all labeled trees. These papers in juxtaposition provide context, motivation and direction for certain topics in discrete mathematics and graph theory, each at an increasing level of rigor and sophistication. Comments from student questionnaires concerning the benefits of learning from historical sources include “It helps me understand the reason why things were put together like they are.” (Received September 08, 2015)